RF/RMRS-96-0062

FINAL FIELD IMPLEMENTATION PLAN FOR THE SOURCE REMOVAL AT THE MOUND SITE IHSS 113

Rocky Mountain Remediation Services, L.L.C

March 1997
Revision 0

ADMINISTRATIVE INFORMATION

Site	Rocky Flats Environmental Technology Site (RFETS), Golden, Colorado
Project Name	Source Removal at the Mound Site - IHSS 113
Date Prepared	March 10, 1997

Approvals

I have read and approved this Field Implementation Plan with respect to project procedures and the planned implementation of the Mound Site Source Removal

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TABLE OF CONTENTS

Section			Page
1 0	INTRODUCTION		1
2 0	SITE LAYOUT AND DEVELOPMENT		1
3 0	PROJECT ORGANIZATION AND PLANT SUPPORT		2
4 0	SITE PREPARATION		8
5 0	HEALTH AND SAFETY		12
6 0	PUBLIC AND MEDIA RELATIONS		16
7 0	SOURCE REMOVAL ACTION		16
	7 1	EXCAVATION	17
		7 1 1 MANAGEMENT OF THE CONTAMINATED SOIL FEED STOCKPILE	19
		7 1 2 SOIL TRANSPORT AND TRAFFIC MANAGEMENT	20
		7 1 3 MANAGEMENT OF INCIDENTAL WATERS	20
		7 1 4 EXCAVATION BOUNDARY SAMPLING	23
	7 2	TREATMENT	23
		7 2 1 PROCESS VERIFICATION SAMPLING	24
		7 2 2 STACK MONITORING	25
		7 2 3 MANAGEMENT OF THE TREATED SOIL STOCKPILES	26
	7 3	SITE RECLAMATION	27
8 0	SPILL RESPONSE AND CONTAINMENT		28
9 0	WASTE MANAGEMENT		32
	9 1	DEBRIS MANAGEMENT	32
	9 2	AQUEOUS-PHASE CONDENSATE MANAGEMENT	33
	9 3	PPE MANAGEMENT	36
	9 4	USED FILTER AND MISCELLANEOUS WASTE MANAGEMENT	36
	9 5	DECONTAMINATION WASTE WATER	37
10 0	DECONTAMINATION		37
11 0	REFERENCES		38

LIST OF TABLES

TABLE		
7 2 2-1	Mound Stack Sample and Location Codes	26
8 1	Mound Site Project Personnel Phone List	30

LIST OF FIGURES

FIGURE		
2 1	Mound Site Source Removal Map	3
2 2	Mound Site Excavation Map	4
2 3	Mound Site Contaminated Soil Feed Stockpile Map	5
2 4	Mound Site Treatment Area Map	6
3 1	Project Organization	7
4 1	Contaminated Soil Feed Stockpile	10
4 2	Cross Section Portion of the Contaminated Soil Feed Stockpile	11
7 1	Mound Site Traffic Plan for Excavation Activities	21
7 2	Mound Site Traffic Plan for Backfilling Activities	22
9 1	Condensate Storage Tanks	34

LIST OF APPENDICES

APPENDIX	
A	Conduct of Operations- Implementation of COOP for the Mound Site Source Removal Project
B	IHSS 190 Authorization to Disturb Soil
C	ALARA Job Review for the Source Removal at the Mound Site (IHSS 113)
D	Forms and Checklists to Support the Mound Site Source Removal
E	Dust Suppression Procedures
F	Site Reclamation - Reseeding Guidance and Specifications
G	Condensate Tanks T-101 and T-102

ACRONYMS

ALARA	As Low As Reasonably Achievable
CRZ	Contamination Reduction Zone
CSFS	Contaminated Soil Feed Stockpile
CWTF	Consolidated Water Treatment Facility
DOE/RFFO	Department of Energy/Rocky Flats Field Office
DynCorp	DynCorp of Colorado, Inc
EMD	Environmental Management Department
EZ	Exclusion Zone
FID	Flame Ionization Detector
FIDLER	Field Instrument for the Detection of Low Energy Radiation
FIP	Field Implementation Plan
FO	Field Operations Standard Operating Procedure
HASP	Health and Safety Plan
HEAF	High Efficiency Air Filter
HEPA	High Efficiency Particulate Air
HSS	Health and Safety Specialist
IHSS	Individual Hazardous Substance Site
IWCP	Integrated Work Control Package
K-H	Kaiser-Hill
MH	McLaren Hart Environmental Engineering Corporation
NRWOL	Non-Routine Waste Origination Log
OPs	Operating Procedures
OSHA	Occupation Safety and Health Administration
PAM	Proposed Action Memorandum
PPE	Personal Protective Equipment
PSI	Pounds Per Square Inch
PSZ	Project Support Zone
QA	Quality Assurance
QC	Quality Control
RBA	Radiological Buffer Area
RCT	Radiological Control Technician
RFETS	Rocky Flats Environmental Technology Site
RTG	Resource Technology Group
RMRS	Rocky Mountain Remediation Services, L L C

RWP	Radiological Work Permit
SAP	Sampling Analysis Plan
SAC	Soil Contamination Area
SCBA	Self Contained Breathing Apparatus
SEG	Scientific Ecology Group
SSOC	Safe Sites of Colorado, Inc
TDU	Thermal Desorption Unit
fTSS	final Treated Soil Stockpile
pTSS	preliminary Treated Soil Stockpile
VOC	Volatile Organic Compounds
yd^3	cubic yard

LIST OF STANDARD OPERATING PROCEDURES (SOPs)

IDENTIFICATION NUMBER:	PROCEDURE TITLE:
1-31000-COOP	Conduct of Operations
1-B37-HSP-12 08	Excavation and Trenching
1-C91-EPR-SW 01	Control and Disposition of Incidental Waters
1-NO8-HSP-21 04	Emergency Response and Spill Control Procedure
2-S47-ER-ADM-05 14	Use of Field Logbooks and Forms
3-21000-ADM-16 01	Occurrence Reporting
3-21000-ADM-18 03	Readiness Review
4-V80-ROI-4 02	Procedure for High and Low Volume Air Sampling
Procedure No FO 1, Rev 3	Air Monitoring and Particulate Control
5-21000-OPS-FO 03	Field Decontamination Operations
5-21000-OPS-FO 04	Decontamination of Equipment at Decontamination Facilities
5-21000-OPS-FO 06	Handling of Personal Protective Equipment
5-21000-OPS-FO 12	Decontamination Facility Operations
5-21000-OPS-FO 15	Photoionization Detectors and Flame Ionization Dectectors
1-C88-WP1027-NONRAD	Nonradioactive waste packaging
1-M12-WO-4034	Radioactive Waste Packaging Requirements
4-C77-WO-1101-	Solid Radioactive Waste Packaging Outside of the PA
1-C80-WO-1102-WRT	Waste/Residue Traveler Instructions
1-I34-WO-1103-NRWOL	Non-Routine Waste Origination Log Instructions

1 0 INTRODUCTION

The purpose of this Field Implementation Plan (FIP) is to describe in detail the tasks and procedures required to complete the Mound Site, (Individual Hazardous Substance Site [IHSS] 113), source removal by September 30, 1997 The purpose of the Mound Site Source Removal Project is to excavate and treat by low temperature thermal desorption, approximately 600 to 1,000 cubic yards (cy) of volatile organic compound (VOC) contaminated soil above the Tier I subsurface action levels specified in Attachment 5, The Action Levels & Standards Framework for Surface Water, Ground Water, and Soils, of RFCA (DOE, 1996) which is contributing to the degradation of groundwater The Mound Site Source Removal Project is a mission activity, MP-ER-20, at the Rocky Flats Environmental Technology Site (RFETS) to reduce the human health and environmental risk associated with the VOC contamination on behalf of Kaiser-Hill Company, Inc , (K-H) for the U S Department of Energy/Rocky Flats Field Office (DOE/RFFO)

The controlling documents for this project are the Proposed Action Memorandum (PAM) for the Source Removal at the Mound Site, IHSS 113 (RMRS, 1997a), the Sampling Analysis Plan (SAP) to Support the Source Removal at the Mound Site, IHSS 113, (RMRS, 1997b), the task-specific Health and Safety Plan for the Source Removal at the Mound Site, IHSS 113, (RMRS, 1997c), the Integrated Work Control Package numbers T0090239, and the applicable Federal State and local regulations, as well as DOE Orders, RFETS policies and procedures, and Environmental Restoration Operating Procedures (OPs) Conduct of Operations (COOP) will be conducted in a manner consistent with RFETS goals, objectives, and approved procedures in accordance with DOE Order 5480 19 Implementation of COOP for the Mound Site Source Removal Project is summarized in Appendix A

2 0 SITE LAYOUT AND DEVELOPMENT

The following site maps show the approximate location of the following principal features

Figure 2 1 Mound Site Location Map
- IHSS 113, Mound Site
- Central Avenue ditch
- Mound Site
- Thermal Desorption Treatment Area
- Contaminated soil feed stockpile (CSFS)
- Treated Soil Stockpile
- Trailer T900D to be used as the site project/staging office
- Trailer T900C to be used for project support

Figure 2 2 Mound Site Excavation Map
- Mound Site
- Area to be excavated
- Exclusion zone (EZ)/Soil Contamination Area (SCA)
- Stepoff pad/radiological buffer area
- Contamination reduction zone (CRZ)

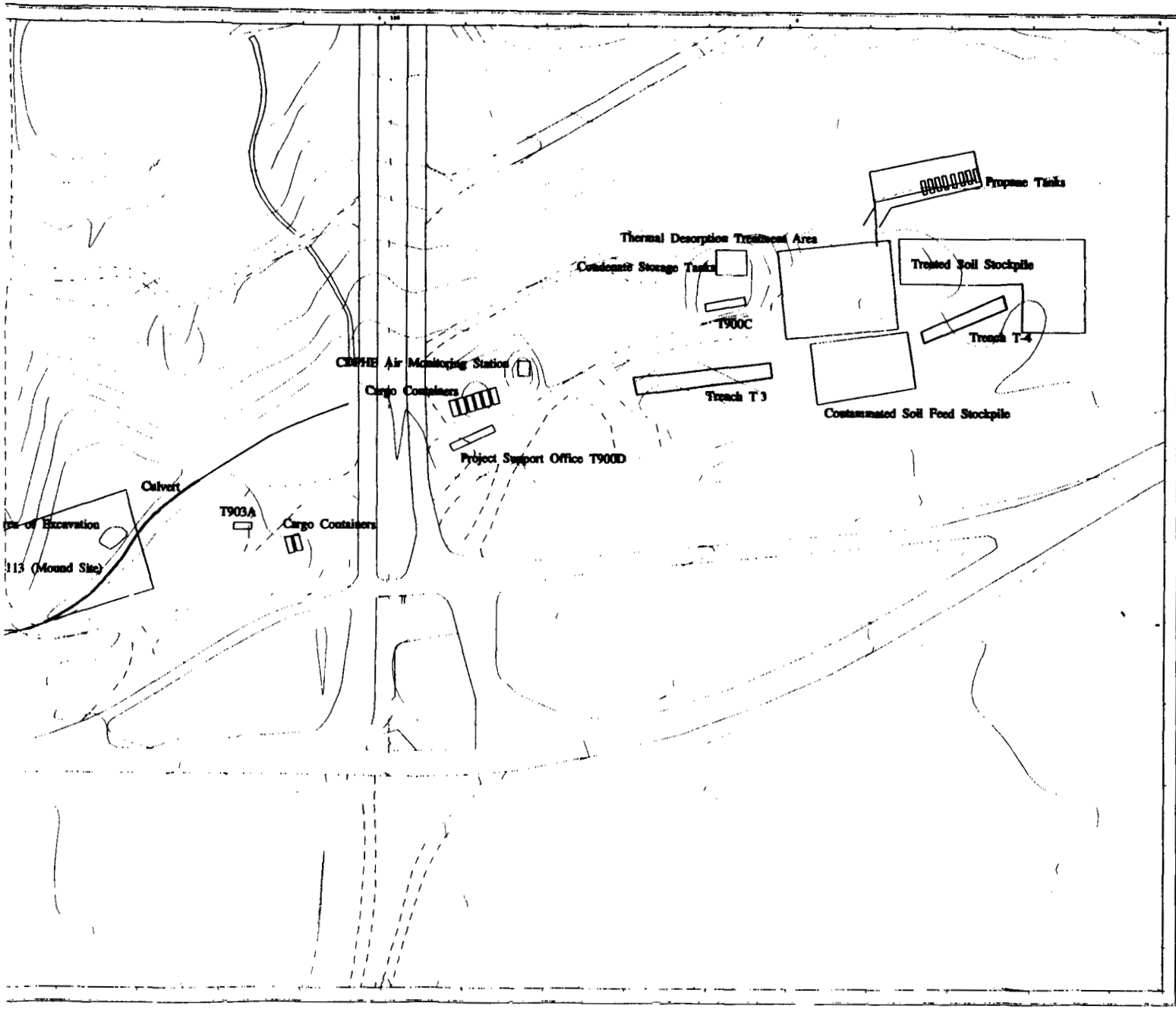
- Stepoff pad/Radiological Buffer Area (RBA)
- 1 800 gallon potable water holding tank (PW)
- 1,800 gallon incidental water holding tank (IW)
- Fire extinguishers, first aid kits
- Project support zone (PSZ)
- Primary and Secondary Assembly areas
- Supplied air trailers
- Trailer T903A to be used for project support

Figure 2 3 Mound Site Contaminated Soil Feed Stockpile Map
- Contaminated soil feed stockpile (CSFS)
- 1,500 KVA substation
- Trailer T900D to be used as the site project/staging office
- Trailer T900C to be used for project support
- Exclusion zone (EZ)/Soil Contamination Area (SCA)
- Contamination reduction zone (CRZ)
- Stepoff pad/radiological buffer area
- Project support zone (PSZ)
- Primary and Secondary Assembly areas
- Supplied air trailer

Figure 2 4 Mound Site Treatment Map
- Thermal desorption treatment area
- Contaminated soil feed stockpile (CSFS)
- Treated soil stockpile
- Two 10,000 gallon, dual-wall condensate storage tanks
- 1 500 KVA substation
- Trailer T900D to be used as the site project/staging office
- Trailer T900C to be used for project support
- Exclusion zone (EZ)/Soil Contamination Area (SCA)
- Contamination reduction zone (CRZ)
- Stepoff pad/radiological buffer area
- Project support zone (PSZ)
- Primary and Secondary Assembly areas
- Supplied Air Trailers
- TDU fuel storage tanks – eight 1,000 gallon liquid propane gas tanks
- 5,000 gallon potable water storage tank for dust suppression
- 300-ton chiller
- Additional equipment as necessary

3 0 PROJECT ORGANIZATION AND PLANT SUPPORT

The project organization is presented in Figure 3 1 and shows the responsible project personnel, subcontractors and plant support contacts Roles and responsibilities are the same as the HASP (RMRS, 1997c). Rocky Mountain Remediation Services, L.L C. (RMRS) has planned and will manage the project and coordinate support for this accelerated source removal action through the appropriate RFETS contractor or subcontractor



Mound Site
Source Removal Map

Figure 2 1

EXPLANATION

- Contours (5 Interval)
- IHSS
- Culvert

Standard Map Features

- Fences
- Paved roads
- Dirt roads

Scale 1 1380
1 inch represents 115 feet

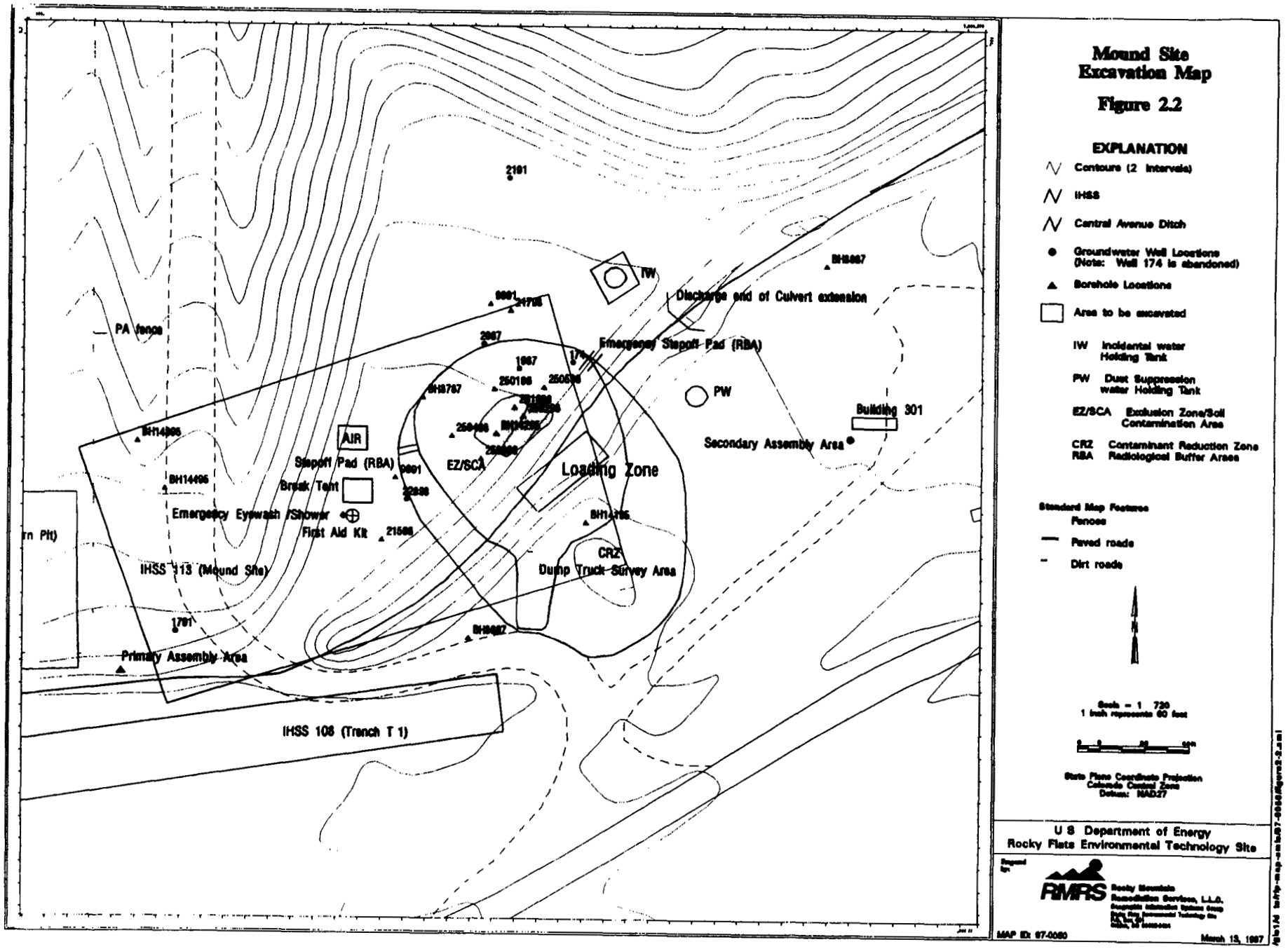
State Plane Coordinate Projection
Colorado Central Zone
Datum NAD27

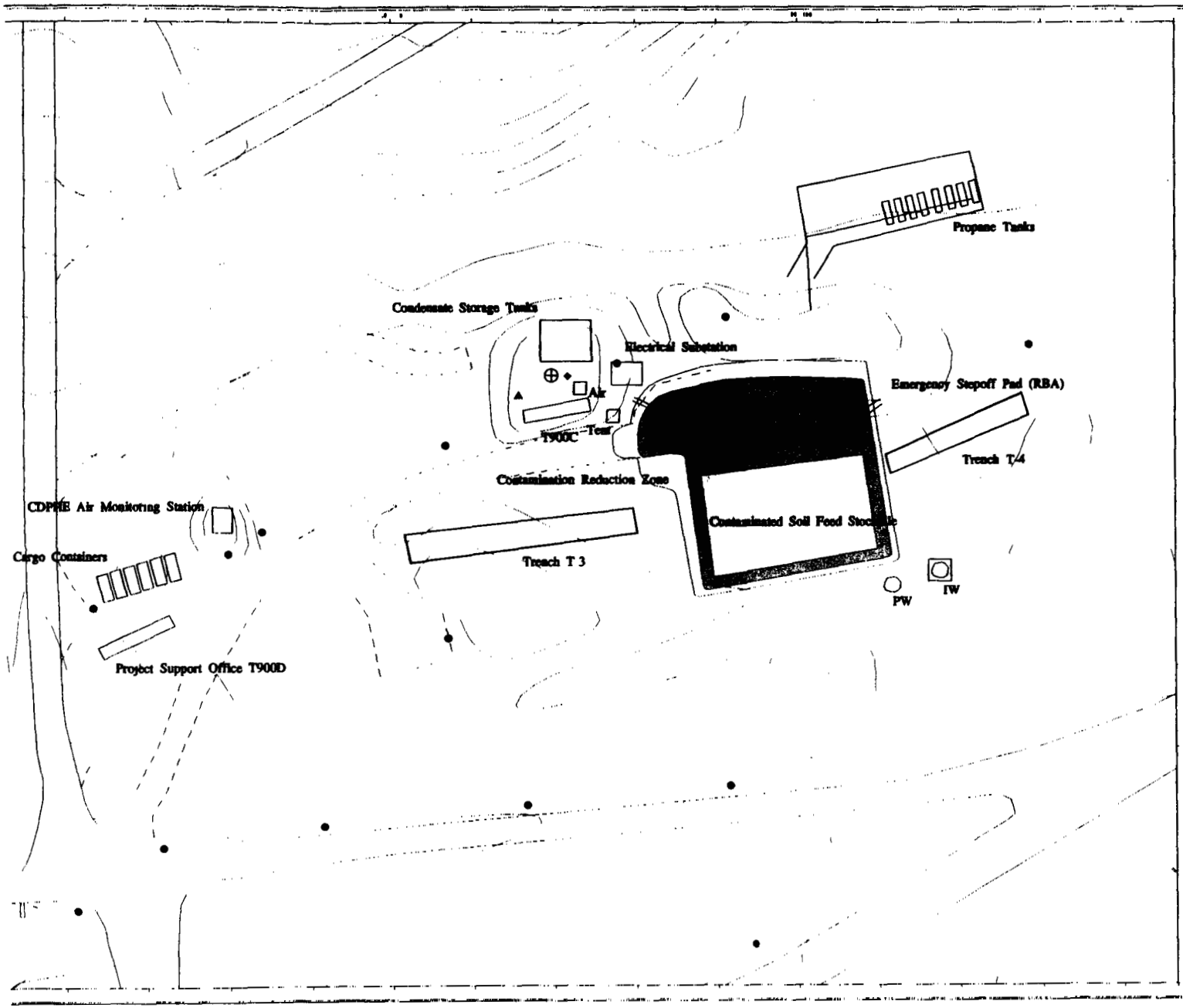
U S Department of Energy
Rocky Flats Environmental Technology Site

Prepared by
RMRS
Rocky Mountain Remediation Services, L.L.C.

MAP ID 97-0045

March 13, 1997


Mound Site
Excavation Map
Figure 2.2
EXPLANATION
Contours (2' Intervals)
IHSS
Central Avenue Ditch
Groundwater Well Locations
(Note: Well 174 is abandoned)
Borehole Locations
Area to be excavated
IW Incidental water Holding Tank
PW Dust Suppression water Holding Tank
EZ/SCA Exclusion Zone/Soil Contamination Area
CRZ Contaminant Reduction Zone
RBA Radiological Buffer Areas
Standard Map Features
Fences
Paved roads
Dirt roads
Scale = 1 : 720
1 inch represents 60 feet
State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD27
U S Department of Energy
Rocky Flats Environmental Technology Site
RMRS
Rocky Mountain Remediation Services, L.L.C.
MAP ID: 97-0060
March 15, 1997
IHSS 113 (Mound Site)
IHSS 108 (Trench T 1)
Loading Zone
EZ/SCA
CRZ
Dump Truck Survey Area
Secondary Assembly Area
Primary Assembly Area
Building 301
PW
IW
Discharge end of Culvert extension
Emergency Eyewash /Shower
First Aid Kit
Break Tent
Support Pad (RBA)
PA fence



Contaminated Soil Feed Stockpile Map

Figure 2.3

EXPLANATION

- Contamination Reduction Area
- Exclusion Zone (Soil Contamination Area)
- Contaminated Soil Feed Stockpile
- First Aid Kit
- Emergency Eyewash & Shower
- Primary Assembly Area
- Secondary Assembly Area
- Power Poles
- Contours (5' Intervals)
- RBA Radiological Buffer Area
- PW Portable Water for dust suppression
- IW Incidental/storm Water holding tank

Standard Map Features

- Fences
- Paved roads
- Dirt roads

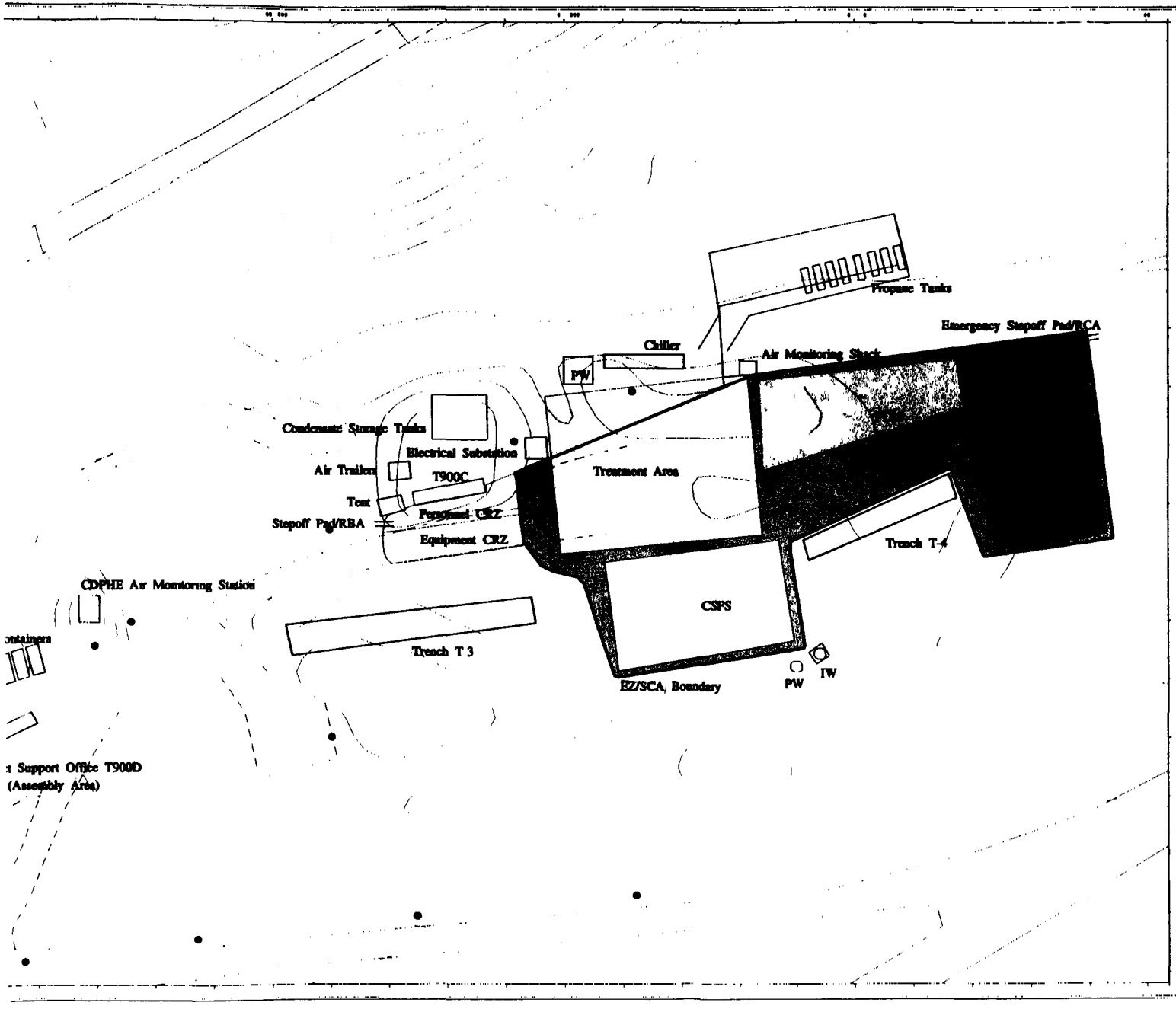
Scale 1 : 840
1 inch represents 70 feet

State Plane Coordinate Projection
Colorado Central Zone
Datum NAD27

U S Department of Energy
Rocky Flats Environmental Technology Site

Prepared by:
RMRS Rocky Mountain Remediation Services, L.L.C
Geographic Information System Group
Rocky Flats Environmental Technology Site
P.O. Box 464
Golden, CO 80402-0464

MAP ID: 97-0045 March 14, 1997



Mound Site Treatment Area Map

Figure 2 4

EXPLANATION

- Power Poles
- Contours (5 Intervals)
- Exclusion Zone/Soil Contamination Area Boundary
- Contamination Reduction Zone (CRZ)
- Exclusion Zone (Soil Contamination Area)
- Contaminated Soil Feed Stockpile (CSFS)
- Exclusion Zone (Soil Contamination Area)
- Preliminary Treated Soil Stockpile (PTSS)
- Final Treated Soil Stockpile (FTSS)

RBA = Radiological Buffer Area
PW = Potable Water for dust suppression
IW = Incidental/storm Water holding tank

Standard Map Features

- Fences
- Paved roads
- Dirt roads

Scale 1 770
1 inch represents approximately 64 feet

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD27

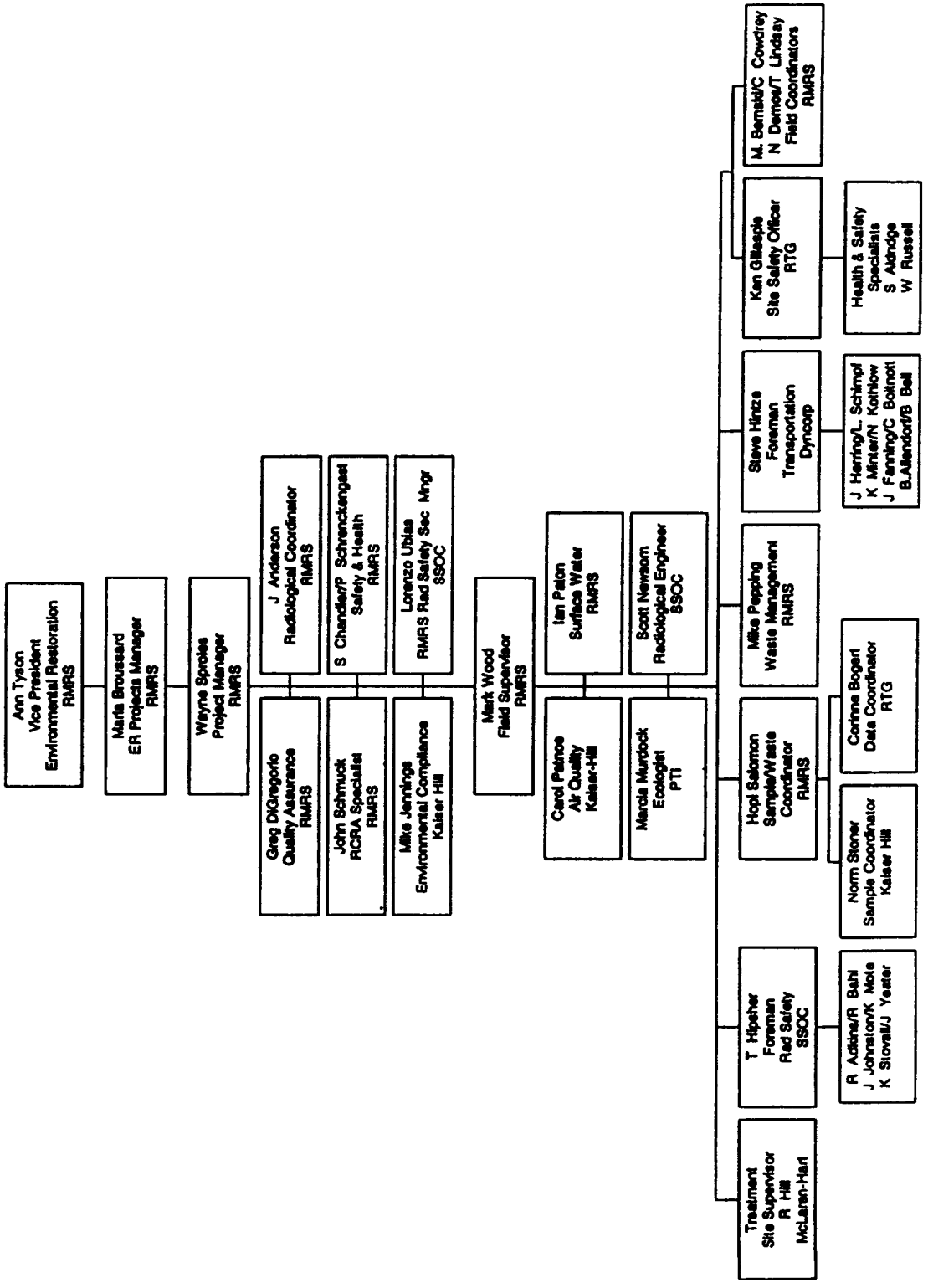
U S Department of Energy
Rocky Flats Environmental Technology Site

Prepared by:
RMRS Rocky Mountain Remediation Services, L.L.C.

MAP ID: 97-0087

March 13, 1997

Figure 3 1
Project Organization



Mound Site excavation activities will be assisted by collective bargaining unit personnel from DynCorp of Colorado, Inc (DynCorp) Specifically, DynCorp/Transportation personnel will assist with heavy equipment operators, laborers, some of the heavy equipment, fuel for the heavy equipment, transportation of materials and supplies to the site, transport of empty waste containers to the site, and transport of full waste containers to designated storage units The low temperature thermal desorption unit (TDU) treatment operations will be performed by the subcontractor, McLaren Hart Environmental Engineering Corporation (MH) Safe Sites of Colorado, Inc., (SSOC) will provide radiological safety support for the project per the RFETS Radiological Control Manual (KH, 1996) Resource Technology Group, Inc , (RTG) is subcontracted to support the project by providing culvert construction, industrial hygienists, a data coordinator, and decontamination and potable water services

DynCorp/Gas Services and K-H Engineering will assist with procurement of propane fuel for the TDU Approximately 20,000 gallons of propane will be used, based on an assumed 90 gallons per hour consumption rate for the four TDUs K-H Environmental Compliance will assist with requirements for air monitoring and ecological support for the project. Collective bargaining unit personnel will be used when required to complete specific hookups or mobilizations per the scope of their contract and the Davis-Bacon determination.

4 0 SITE PREPARATION

Site preparation for the Mound Site Source Removal project consists of preparing the excavation and treatment areas for the project The following tasks have been identified for the excavation area extending the Central Avenue ditch culvert approximately 200 feet to the east, placing clean fill and grading as necessary to preserve topsoil and to facilitate site access/egress, constructing a soil berm to control stormwater, consolidating two cargo conexs adjacent to the Mound Site and relocating the contents to cargo conexs in the Field Operations Yard, as necessary The following tasks have been identified for the treatment area and Contaminated Soil Feed Stockpile (CSFS) area placing clean fill and grading as necessary to improve TDU operations, preserve topsoil, and facilitate site access/egress, and then preparing the CSFS as described below

CULVERT INSTALLATION

The Engineering Order Design Package for the Central Avenue ditch culvert is provided in the Phase I Culvert Installation Site Preparation IWCP Extension of the existing Central Avenue ditch culvert is required to provide a level working area for site access/egress during excavation and backfilling activities, to minimize surface water infiltration into groundwater and thus groundwater infiltration into the excavation, and to prevent surface water from entering the excavation because the proposed excavation will extend into the north wall of the unlined ditch The Central Avenue ditch (IHSS 190) is being evaluated as a no further action

IHSS under RFCA (DOE, 1996) and RMRS has performed an environmental due diligence evaluation of the topsoil in the ditch for the culvert extension and received concurrence approval from KH to relocate the IHSS 190 topsoil (see Appendix B) Topsoil will be stockpiled on the north side of the proposed excavation area where it will be utilized as a berm to control stormwater The beamed topsoil will have dust suppression cover material, or equivalent controls, placed as described in Section 7 2 3 Upon completion of backfilling of treated soil this topsoil will be regraded across the Mound Site excavation area and revegetated as described in Section 7 3 Site preparation activities for the culvert installation will be performed in accordance with the IWCP T0090239-1 requirements

CONTAMINATED SOIL FEED STOCKPILE SITE PREPARATION

Site preparation of the CSFS consists of stripping the upper 4-6 inches of top soil from the CSFS area and stockpiling the topsoil to the south, installing the french drain and sump storm water collection system, and staging concrete jersey barriers The topsoil will have dust suppression cover material, or equivalent, placed as described in Section 7 2 3 The CSFS will have dimensions of approximately 40 feet by 100 feet established by concrete Jersey barriers Figure 4 1 depicts a plan view of a CSFS while Figure 4 2 depicts a portion of the cross section of the structure, as it is to be maintained with a water resistant cover Features of the CSFS to be constructed include the following

A plastic-lined, gravel-filled trench and an incidental water collection sump will be installed Accumulated storm water will be collected from the incidental water collection sump located at Northeast corner of the trench using a sump pump or equivalent This trench will be installed to collect surface run-on/run-off including that which has a likely potential of contamination due to generation near the loading/unloading end of the CSFS An incidental water holding tank with secondary containment will be installed southeast of the CSFS (Figure 2 3)

Jersey barriers will be installed, inside of the gravel-filled trench, around three sides to contain the contaminated soil, which will minimize the commingling of storm water run-on with contaminated soil and minimize the wind blown dispersion of soil

A custom fit, water resistant plastic tarpaulin will be stretched across the jersey barriers to minimize accumulation of storm water and to minimize the wind blown dispersion of soil

Site preparation activities for the CSFS will be performed in accordance with the HASP the Radiological Work Permit (RWP), and the requirements of the Phase I Site Preparation of the CSFS IWCP T0090239-2

Figure 4 1
Contaminated Soil Feed Stockpile

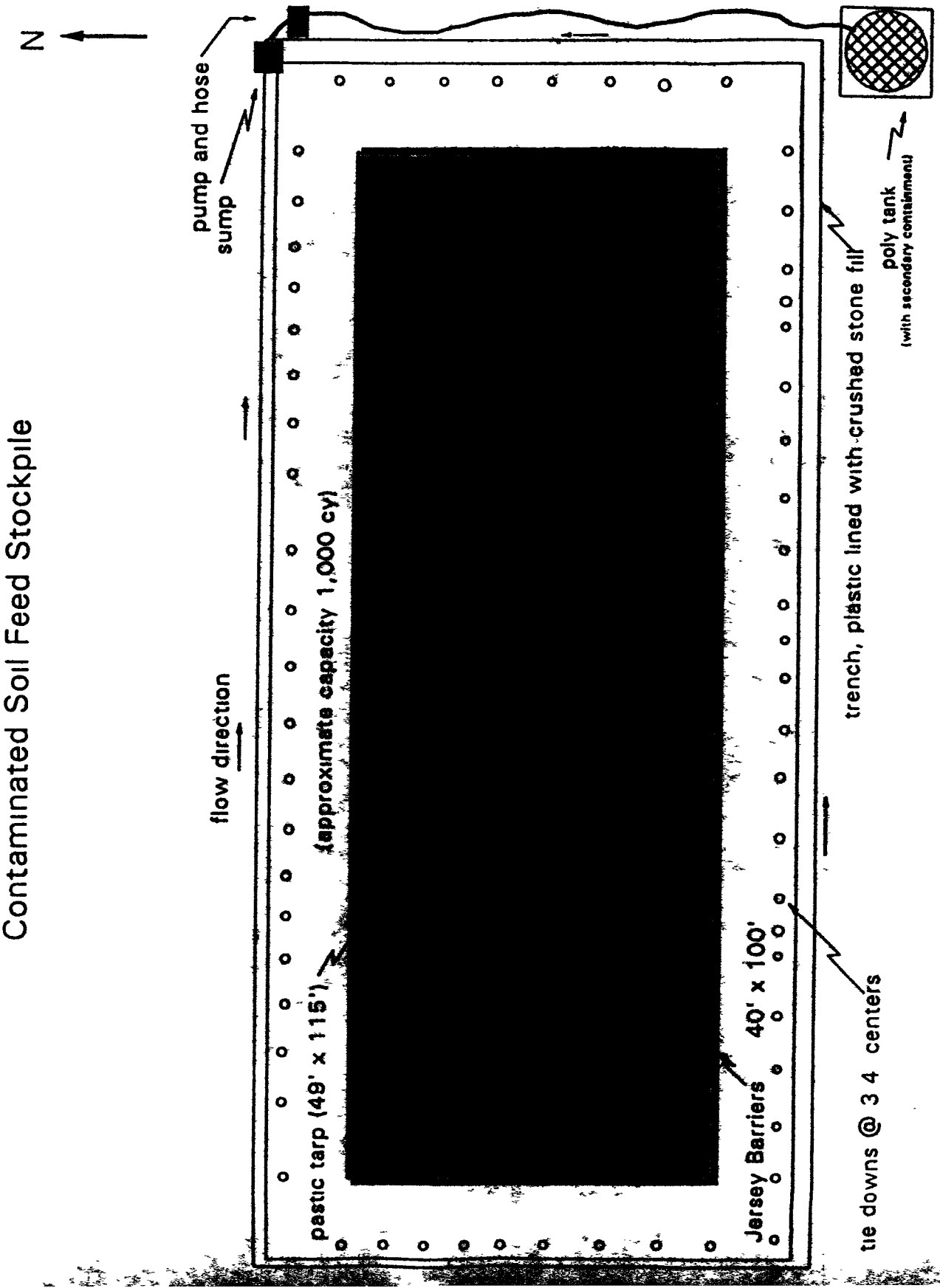
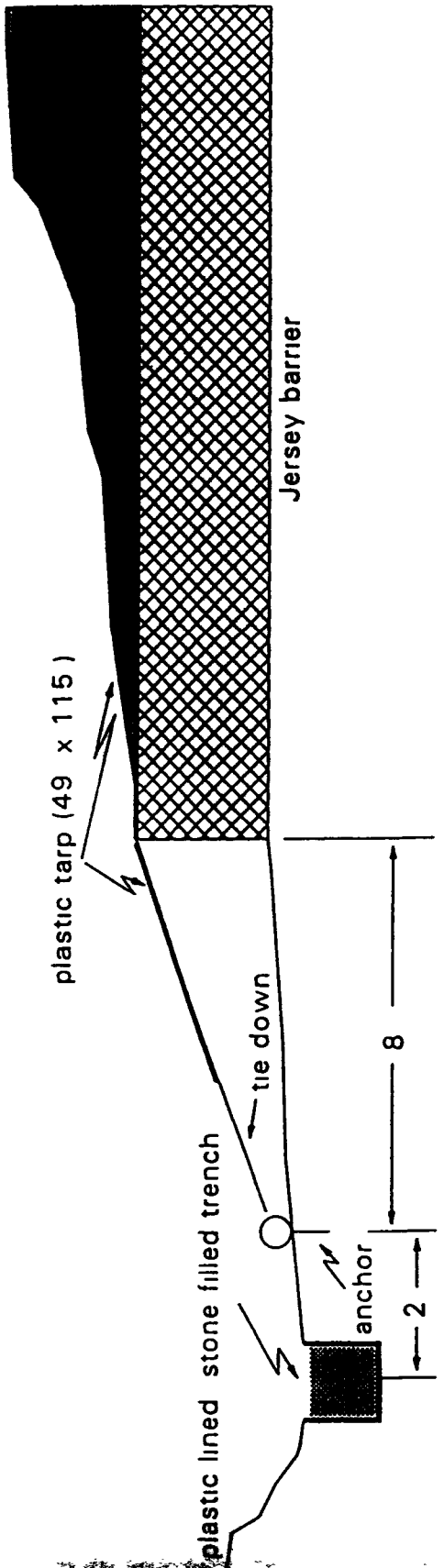


Figure 4 2

Cross Section Portion of the Contaminated Soil Feed Stockpile



5 0 HEALTH AND SAFETY

RMRS will be responsible for the health and safety of all workers at the site The RMRS Site-Specific Health and Safety Plan (HASP) for the Source Removal at the Mound Site (RMRS, 1997c) is the lead document for worker safety This includes all collective bargaining unit, subcontractor, other site personnel, and RMRS personnel RMRS will conduct training specific to the supplied air equipment used at the site before initiation of field activities In the event that unanticipated hazards or conditions are encountered, as described in the HASP (RMRS, 1997c), the "Check List for Restart of Mound Operations" will be filled out by the Project Manager (Appendix C) Activity Hazard Analyses or modifications to the HASP (RMRS, 1997c) will be prepared to address new hazards or conditions that are identified. The treatment vendor, MH, will prepare a site-specific HASP to address the expected and unexpected hazards or conditions associated with their operations The MH HASP will be reviewed and concurred with by the appropriate K-H, SSOC, and RMRS personnel

Figures 2 2 and 2 3 show the approximate layout of the excavation EZ/SCA, CRZ, and PSZ per the site specific HASP (RMRS, 1997c) Figure 2.4 show the approximate layout of the treatment EZ/SCA, CRZ, and PSZ per the site specific HASP for treatment. The EZ/SCA is defined as the area of the project site requiring the most restrictive Personal Protective Equipment (PPE) for access The CRZ and stepoff pad/radiological buffer areas are defined as the areas for access to and egress from the EZ/SCA. The CRZ will be utilized for equipment and material staging, the mobile decontamination pad if needed, and equipment refueling The PSZ is defined as the project area requiring site specific training for unescorted access or escorted access if lacking site specific training. Project specific training required for the implementation of the Mound Site Source Removal is described in detail in the HASP (RMRS, 1997c) and a project-specific training matrix will be prepared as part of the RMRS Readiness Review Checklist (ADM-18 03).

Project personnel will be required to use the sign in/out log at T900D prior to site access to the CRZ, RBA, or EZ/SCA and obtain a project access pass Visitors requiring unescorted access to the PSZ must use the sign in/out log at T900D and obtain a project access pass from T900D To obtain a project access pass project personnel will be authorized by the Project Manager, Field Supervisor, or Site Safety Officer documenting completion of all applicable training requirements Personnel entering the EZ/SCA will comply with the requirements of the task-specific RWP Project personnel entering the EZ/SCA will be trained in the use of the site-specific breathing air equipment. Visitors will be required to be escorted while in the PSZ, if all the site specific training requirements have not been met

The following personnel and equipment have been identified within the excavation and

CSFS staging EZ/SCA and CRZ Some personnel may have multiple roles (e g RMRS Field Supervisors supervising both excavation and stockpiling activities)

Excavation support and CSFS staging personnel
- RMRS Excavation and CSFS Field Supervisor(s)
- An excavator Operator
- A front-end Loader Operator that will also operate the dump truck
- An excavation Spotter
- Two to four laborers, as needed, to secure tarp over the CSFS
- One Radiological Control Technician (RCTs) to perform radiological monitoring of excavated soil
- RMRS Industrial Hygiene – air monitoring for volatile organics and particulate emissions
- Sample team as needed, for boundary verification sampling

Excavation equipment
- One, 2 7 cubic yard (yd^3) bucket tracked excavator or equivalent
- One, 4 yd^3 bucket front end loader or equivalent
- One, 20 yd^3 dump truck or equivalent

The following air equipment or equivalent will be used by RMRS in support of the excavation and CSFS staging activities with all quantitities approximated
- Eight, MSA Quickfill Self Contained Breathing Apparatus (SCBA) units
- Eight, MSA Supplied Air Respirators
- Three or four high pressure regulators one each for equipment operators, one for each of the cascade breathing air systems
- Two to four high pressure pigtails
- Three 1/4-inch by 50 foot (ft) high pressure refill hose
- Four 1/4-inch by 50 ft airline hose
- Two manifold airline assembly
- Two cascade fittings
- Two 24 cylinder breathing air trailers or equivalent
- Four 3500 pounds per square inch (psi 310 cf) or equivalent air cylinders mounted on the heavy equipment
- Four low pressure alarms, one each for equipment operators and one for the cascade system
- Miscellaneous connections and equipment

The following personnel and equipment will be used within the excavation and CSFS staging CRZ or stepoff pad radiological buffer area (RBA)
- One to two RCTs for the screening of personnel and equipment out of the EZ/SCA
- One laborers to brush off soil from the outside of the dump truck and provide dust suppression water, as needed

• On a limited basis, union personnel will be in the CRZ to refuel and repair the heavy equipment
• Sampling support personnel, as needed

The following personnel and equipment or equivalent will be used within the Project Support Zone (PSZ) during excavation and CSFS staging
• One RMRS Site Field Supervisor or Project Manager
• One RMRS Site Safety Officer and/or RMRS Health and Safety Supervisor
• One to two RMRS Field Coordinator(s)
• One RMRS support personnel providing assistance with the supplied air quick connects monitoring the supplied air trailer, and refilling air bottles as needed
• On a part-time basis, one RMRS support personnel
• SSOC Radiological Engineering or Safety support personnel
• One to two RCTs to perform high and low volume air sampling for radionuclides
• On an as-needed basis subcontractor or vendor personnel delivering equipment, potable water, and picking up incidental or storm water

The following personnel and equipment have been identified within the treatment EZ/SCA and CRZ
Treatment support personnel
• RMRS TDU Field Supervisor, as needed
• RMRS TDU Site Safety Officer, as needed
• MH Quality Assurance (QA) Technician, as needed
• One to two MH Health and Safety Specialists (HSSs) – organic vapor, radionuclide, and particulate air monitoring
• Two MH Equipment Operators
• Five MH technicians
• One MH shift supervisor, as needed

Treatment equipment or equivalent equipment
• Four IRV-150 TDUs
• Two centrifugal blowers
• Two High Efficiency Air Filters (HEAF)
• Two High Efficiency Particulate Air (HEPA) filters
• Associated piping and electrical system
• Two front end loaders
• Miscellaneous equipment

The following personnel and equipment will be used within the treatment CRZ.
• One MH HSS for the screening of subcontractor personnel out of the EZ
• On a part-time basis, one RMRS support personnel providing assistance with the supplied air quick connects

The following personnel and equipment or equivalent will be used within the Project Support Zone (PSZ) during treatment

- One RMRS Site Field Supervisor
- One RMRS Site Safety Officer and/or RMRS Health and Safety Supervisor
- On a part-time basis, one RMRS support personnel
- SSOC Radiological Engineering and Safety personnel
- Personnel to refuel the heavy equipment as needed
- On an as-needed basis subcontractor or vendor personnel delivering equipment, propane potable water and picking up condensate and or storm water
- One MH project superintendent
- One MH Site Safety Officer
- Two MH HSSs for high and low volume air sampling for radionuclides, particulate monitoring and VOC perimeter monitoring
- MH will stage one 300-ton chiller and one potable water container for dust suppression
- MH will stage additional equipment, as necessary
- RMRS will utilize two 10,000 gallon tanks for storage of condensate and storm water
- RMRS will utilize one 1500 KVA skid mounted substation in the PSZ for electrical power
- One to two 24 cylinder air trailer(s)
- RMRS will stage eight 1,000 gallon Liquid Propane Gas storage tanks
- RMRS will stage additional above-ground storage tanks, as needed to support dust suppression activities or manage incidental waters

The following personnel and equipment have been identified with the backfilling SCA

Backfilling personnel

- RMRS Field Supervisor(s)
- Two Front-end Loader Operators
- One to two Dump Truck Operators
- Backfilling Spotter
- Two laborers providing dust suppression water
- Radiological Control Technicians (RCTs)– radiological monitoring of equipment and personnel out of the EZ/SCA
- SSOC Radiological Engineering and Safety personnel
- RCTs performing high and low volume air sampling for radionuclides
- RMRS Industrial Hygiene – air monitoring for particulate emissions

Backfill equipment

- Two 4 yd^3 bucket front end loaders or equivalent
- One to two 10 to 20 yd^3 dump truck or equivalent

Radiological high volume and low volume air monitoring equipment will be supplied by SSOC Radiological Engineering in support of the source removal action High volume and

low volume air sampling for particulate radionuclides will be performed as directed by SSOC Radiological Engineering (Appendix C) Approximately two high-volume air sampling stations will be set up downwind from the following site activities. excavation, stockpiling soil in the CSFS, soil treatment, and backfilling, as needed Locations will be determined by the wind direction at any given time during the evolution of the above activities High volume and low volume air sampling will be performed to establish baseline airborne concentrations of particulate radionuclides and resultant airborne concentrations from soil movement activities during soil excavation, soil stockpiling, soil treatment, and if required during backfilling of treated soil. Sampling frequencies and radon discrimination are detailed in the task-specific As Low As Reasonably Achievable (ALARA) job review (Appendix C)

6 0 PUBLIC AND MEDIA RELATIONS

The public and media relations will be coordinated through Ann Tyson, RMRS, and Ann Sieben, K-H A project sign will be installed at the southeast corner of the project site. RMRS Mound Site project personnel will coordinate with the on-site subcontractor for photographic support and documentation Access control to the site will be in accordance with Section 5 0 of this FIP

7 0 SOURCE REMOVAL ACTION

The source removal action at the Mound Site will consist of three interdependent tasks The first is to excavate and transport the contaminated soil to the CSFS, the second is to treat the soils with the TDU, and the third is to backfill the treated soil and reclaim the excavation and treatment areas The estimated project duration is from March 20, 1997 to September 30, 1997, with the source removal activities completed by July 31, 1996. Excavation activities are scheduled to operate between March 21 and April 8, 1997, between the hours of 0600 to 1800 TDU activities are scheduled between May 8 to June 20, 1997, and operate between 0600 Monday through 0600 Saturday until completion of the treatment portion of the project. Field logbooks and forms will be utilized per procedure 2-S47-ER-ADM-05 14 (Use of Field Logbooks and Forms) and COOP-006 (Operating Area and Logs) Appendix D presents a number of forms/checklists that will be used to support the source removal

Site activities will be performed in accordance with the HASP, the task-specific RWPs, and the task-specific IWCPs In addition specific task will be covered by Pre-Evolution Briefs, scheduling field activities on the weekly Environmental Restoration Plan-of-the-Day (POD) and performing daily POD briefings at the health and safety tailgate meetings Communications will be performed in accordance with COOP-015 (Appendix A) and the project will utilize the Environmental Restoration radio channel EMAD-6

7 1 EXCAVATION

This section discusses the excavation activities and procedures associated with the source removal action Excavation activities consist of excavation, transport, and staging the excavated soils in the CSFS RMRS will coordinate the excavation of approximately 600 to 1,000 cubic yards of material from the excavation The material will be excavated with a tracked excavator (John Deere 992E, or equivalent) The soil will be moved to the CSFS with a articulated dump truck (D400E or equivalent) where the soil will be managed with a front-end loader (John Deere 966 or equivalent) Soil with the highest levels of VOCs will be labeled with flags in the CSFS The IWCP for excavation, T0090239-3, outlines the procedures and steps for performing the tasks for excavation, transport and stockpiling of contaminated soil for the Mound Site

The tracked backhoe or excavator will proceed from approximately 8 feet southwest of the highest known contamination at boring 14295 and 27 feet towards the northeast (Figure 2 2) The excavated soil will be brought up in the bucket of the excavator and the bucket will be placed on the ground Soil in the bucket will be radiologically screened before placing the soil into the dump truck

Soil in the bucket will be radiologically screened using a Field Instrument for the Detection of Low-Energy Radiation (FIDLER) per the RFETS Environmental Management Radiological Guidelines and the SAP (RMRS, 1997b) A decision level of 5,000 counts per minute (cpm) with the FIDLER will be used as the basis for segregating excavated soil for further radiological analysis Notification of appropriate project personnel will be made for any soil with FIDLER screening results greater than 5,000 cpm Soil with less than 5,000 cpm with the FIDLER can be deposited into the 20 yd^3 dump truck in the loading zone for transport to the CSFS A fill line will be denoted by project personnel near the top of the inside lip of the dump truck's bed for the excavator operator to not exceed The outer sides of the dump truck will be visibly inspected by site personnel and brushed clean of any loose soil while in the EZ/SCA The filled dump truck will be moved up to the dump truck survey area where it will be monitored out of the EZ/SCA by the RCT per the RWP In the event that unanticipated hazards or conditions are encountered as described in the HASP (RMRS 1997c) the 'Check List for Restart of Mound Operations" will be filled out by the Project Manager (Appendix D)

Soil exhibiting greater than 5,000 cpm with the FIDLER will be segregated at the excavation site by placing the soil on a plastic tarpaulin, or equivalent, adjacent to the excavation and covering the soil with a plastic tarpaulin or equivalent Soil with greater than 5,000 cpm will then be sampled in accordance with the SAP (RMRS, 1997b) segregated in the CSFS with additional concrete jersey barriers, covered with a plastic tarpaulin, or equivalent and weighted down to prevent particulate dispersion Soil with greater than 5 000 cpm will be a radiological pause point until evaluation of the radiological isotopes present in the soil is

performed Soil with greater than 100,000 cpm will be a radiological hold point. Radiological evaluation will be performed by SSOC Radiological Engineering, SSOC Radiation Safety, RMRS Management and the RMRS Radiological Coordinator, and K-H Program Management before excavation activities can resume. Transport of soil with greater than 5,000 cpm will be performed at the end of the shift, depending on the volume, to a segregated area in the CSFS and separated from the less than 5,000 cpm soil with concrete jersey barriers Debris in the form of drums or metal of any kind will require a hold point for work until and, if required, further isotopic analysis and evaluation by SSOC-Radiological Engineering, SSOC-Radiation Safety, RMRS Management and the RMRS Radiological Coordinator, and K-H Program Management before resuming excavation activities

Radiological high volume and low volume air sampling for particulate radionuclides will be performed during periods of soil movement or other dust generating activities per the ALARA job review In addition, the Kaiser-Hill Air Quality Management group maintains the RFETS Radioactive Ambient Air Monitoring Program (RAAMP) which monitors the perimeter of RFETS continuously with samples collected and analyzed on a monthly basis. The RAAMP sampling network also includes monitoring stations inside the perimeter of RFETS which are collected but not analyzed unless conditions warrant additional analysis

Preliminary ambient temperature head space screening samples may be collected at the discretion of the RMRS excavation field supervisor at a depth of approximately 8 feet and prior to collection of excavation boundary sampling to assist in the identification of contamination excavation limits per the SAP (RMRS, 1997b) and FO.15 Before excavation, groundwater water levels from the nearby monitoring wells will be monitored to establish the depth to the upper hydrostratigraphic unit's piezometric surface (unconfined water table)

Wind speed and direction will be monitored during field activities and particulate dust perimeter monitoring will be performed in accordance with FO 1 (Air Monitoring and Dust Control) and the HASP (RMRS, 1997c) Monitoring for VOCs around the perimeter of the EZ/SCA will be performed in accordance with the HASP (RMRS, 1997c). Dust suppression will be performed using a potable water spray or mist onto the soil as it is excavated.

Dense nonaqueous phase liquids (DNAPLs), if present, are expected to remain in the soil when excavated and small lenses or pockets when disturbed during excavation will be immediately absorbed by surrounding soils Visibly stained areas of the excavation will be removed If a sufficient amount of recoverable DNAPL is encountered the liquid will be containerized, characterized, and stored temporarily onsite until offsite shipment for disposal per RFETS procedures (see Section 9 1). A non-routine waste origination log (1-I34-WO-1103-NRWOL) will be prepared at that time to accompany the waste residue traveler (1-C80-WO-1102-WRT)

Once the excavation reaches a depth of 4 feet, a health and safety restricted zone of six feet from the edge of the excavation will be maintained for fall protection per Occupation Safety and Health Administration (OSHA) regulations and the site specific HASP (RMRS, 1997c) If personnel are required to get closer than six feet to the edge of the excavation, personnel restraints using a full body harness and appropriate hookups to a jersey barrier or equivalent fixed body will be used Project personnel will maintain a safe distance of 20 feet from the excavator during operation Project personnel can approach the excavator after eye contact, the appropriate hand signals have been given and/or radio communication, and the operator has placed the bucket on the ground

At the completion of excavation and excavation boundary sampling activities the excavation will be secured with an appropriate locking boundary, chain-link fence or equivalent, to prevent unauthorized entry to the excavation The excavation will be inspected periodically until the excavation is backfilled during site reclamation activities (see Section 7 3)

7 1 1 MANAGEMENT OF THE CONTAMINATED SOIL FEED STOCKPILE

Soil excavated from the Mound Site will be placed in the CSFS as shown in Figures 2 1 and 2 3 The CSFS will be maintained during excavation and treatment activities as described below

Storm water collected from the french drain will be used to control dust on soils awaiting treatment in the TDU, and any extra will be handled as incidental water and evaluated per the procedure "Control and Disposition of Incidental Waters, 1-C91-EPR-SW 01" Evaluation consists of analysis for gross alpha, gross beta, conductivity, nitrates, pH, and volatile organic compounds If incidental water is found to be contaminated per SW 01 and/or contains VOCs equal to or greater than the RFCA surface water standards for Segment 5, incidental water will be sent to the Consolidated Water Treatment Facility (CWTF) Incidental water holding tanks will be labeled appropriately

Soil within the CSFS will be tarped when soil is not being actively added to, or removed from, the active portion of the CSFS Care will be taken to avoid contact between the top side of the plastic tarpaulin and the contaminated soil within the CSFS Rope lines may be placed through the grommets at the front end of the tarpaulin These lines can be used to pull the tarp on and off the CSFS

After completing the treatment of soils from the Mound Site, surface soil within the CSFS will be sampled in accordance with the procedures described in the SAP (RMRS, 1997b) Contaminated soil beneath the CSFS, as identified by the sample results will be removed by a front end loader or equivalent and processed through the TDU

7 1.2 SOIL TRANSPORT AND TRAFFIC MANAGEMENT

A 40 ton/20 cy^3 articulated dump truck (D400E or equivalent) will be utilized to transport contaminated soil from the excavation area to the CSFS Due to the location of the excavation and treatment areas, a portion of the existing paved road on Central Avenue will be utilized (Figure 2 1). Dust minimization techniques to be utilized during soil transport include monitoring wind speed per FO 1, applying potable water during soil excavation and loading to achieve a satisfactory moisture content but not to saturation, and reduce dump truck speed to five miles per hour The exterior of the dump truck will be visually inspected and cleared of any loose soil in the EZ/SCA prior to transport and radiologically surveyed prior to leaving the CRZ. The dump truck will be visually monitored during transport to observe any potential spillage Any soil tracked onto the paved roadway during field activities will be cleared prior to reopening to RFETS traffic.

Traffic will be diverted to the south two lanes of the East Access/Central Avenue Road at points east and west of where the road splits from the rest of the roadway. The northernmost westbound lane would be closed from the point to the east where the lane diverges to the point west of the Inner East Gate where the road rejoins the rest of the East Access/Central Avenue Road. During normal work days, the northern most lane will remain open between 0630 and 0800 and 0500 to 1700 to address peak traffic flow The northern most lane would only be closed during periods of excavation between 0800 and 1500 or before or after peak traffic hours Excavation activities are scheduled to begin on an Alternate Work Schedule Friday, March 21, 1997 The northern most lane will be closed from approximately 0700 on March 21 through 1700 on March 23, 1997 Lane closure will be achieved by placing a lane closure sign, flashing barricades, and traffic cones as shown on Figure 7.1. Access to the sewage treatment plant and northeast access roads on the inside and outside of the Inner Perimeter Fence will not be blocked. However, traffic will be controlled during soil transport by placing flagmen approximately 100 to 200 feet north and south of the respective intersections to ensure safe movement of RFETS traffic and the articulated dump truck transporting contaminated soil as shown on Figure 7 1 Prior to reopening the north lane of the east access road the roadway will be cleared of any soil tracked onto the roadway Similar traffic controls will be utilized during soil transport for backfilling as shown on Figure 7 2

7 1 3 MANAGEMENT OF INCIDENTAL WATERS

Incidental waters encountered as a result of storm water or groundwater entering and collecting in the excavation will be removed from the excavation if sufficient volume is present and transferred to an 1800 gallon incidental water holding tank adjacent to the excavation area. The incidental water holding tank will be constructed with a sufficient secondary containment If sufficient storm water collects within the storm water containment berm on the north side of the excavation area, this incidental water will also be transferred to

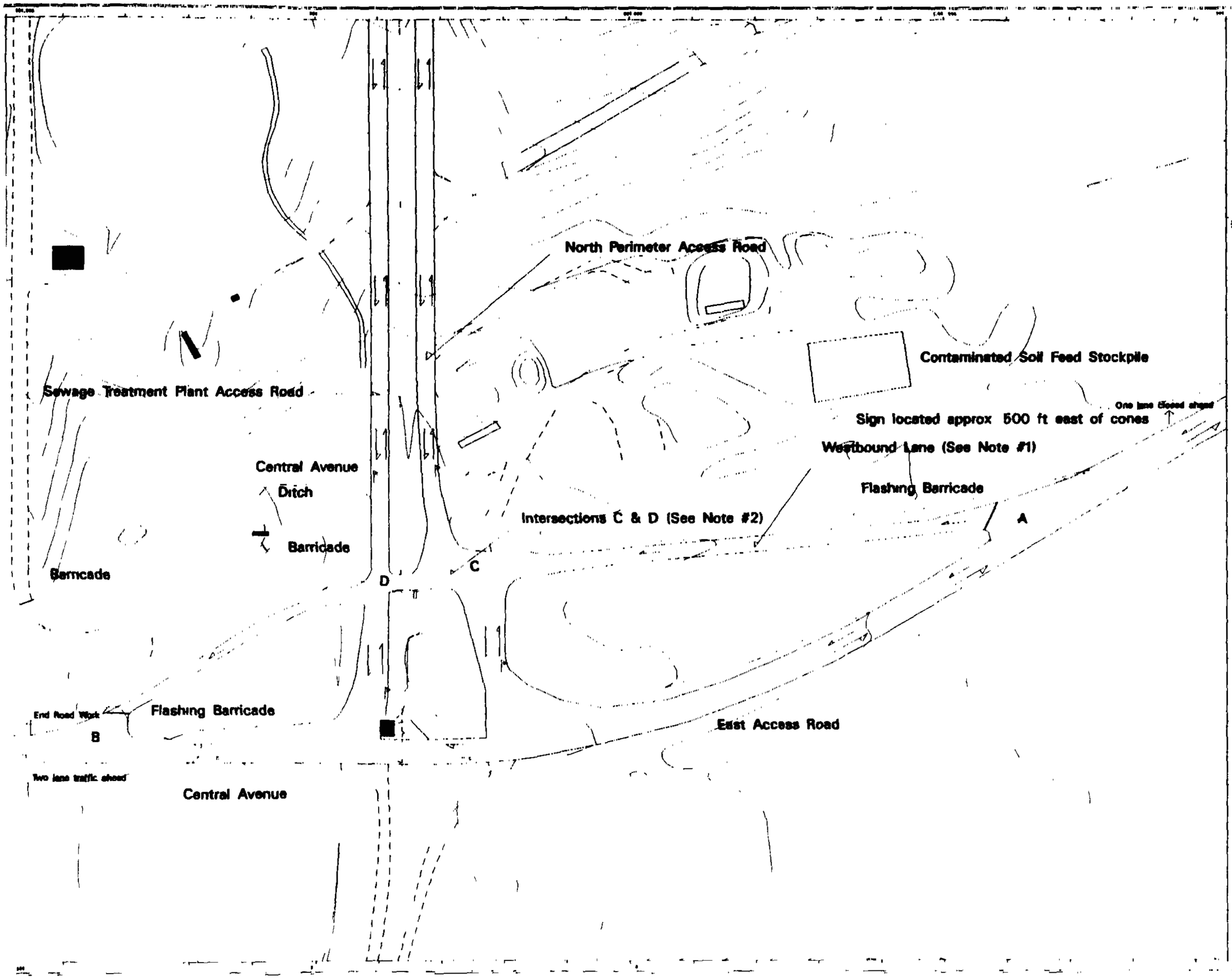


Figure 7 1
Mound Site Traffic Plan for Excavation Activities

EXPLANATION

- Flagman
- Road Sign
- Traffic cones tapered to close off north lane
- Barricade
- Mound Site Excavation
- Trailers T900C & T900D
- Buildings or other structures
- Lakes and ponds
- Streams, ditches, or other drainage features
- Fences
- Paved roads
- Dirt roads

DATA SOURCE:
Buildings, roads, and fences provided by Facilities Engr
EG&G Rocky Flats, Inc. 1991
Hydrology provided by USGS (date unknown)

NOTE:

1-Westbound lane between Junctions A & B remains open t Plant raffic between he following peak hour
6:30 8:00 a m
3:00 5:00 p.m.

2 Flagmen at intersections C & D will control traffic for the north perimeter access road & the sewage Treatment Plant (STP) access road for hours other than peak traffic flow.

State Plane Coordinate Projection
Colorado Central Zone
Datum NAD27

U S Department of Energy
Rocky Flats Environmental Technology Site

Prepared by
RMRS Rocky Mountain Remediation Services, L.L.C.

MAP ID: 97-0085

March 5, 1997

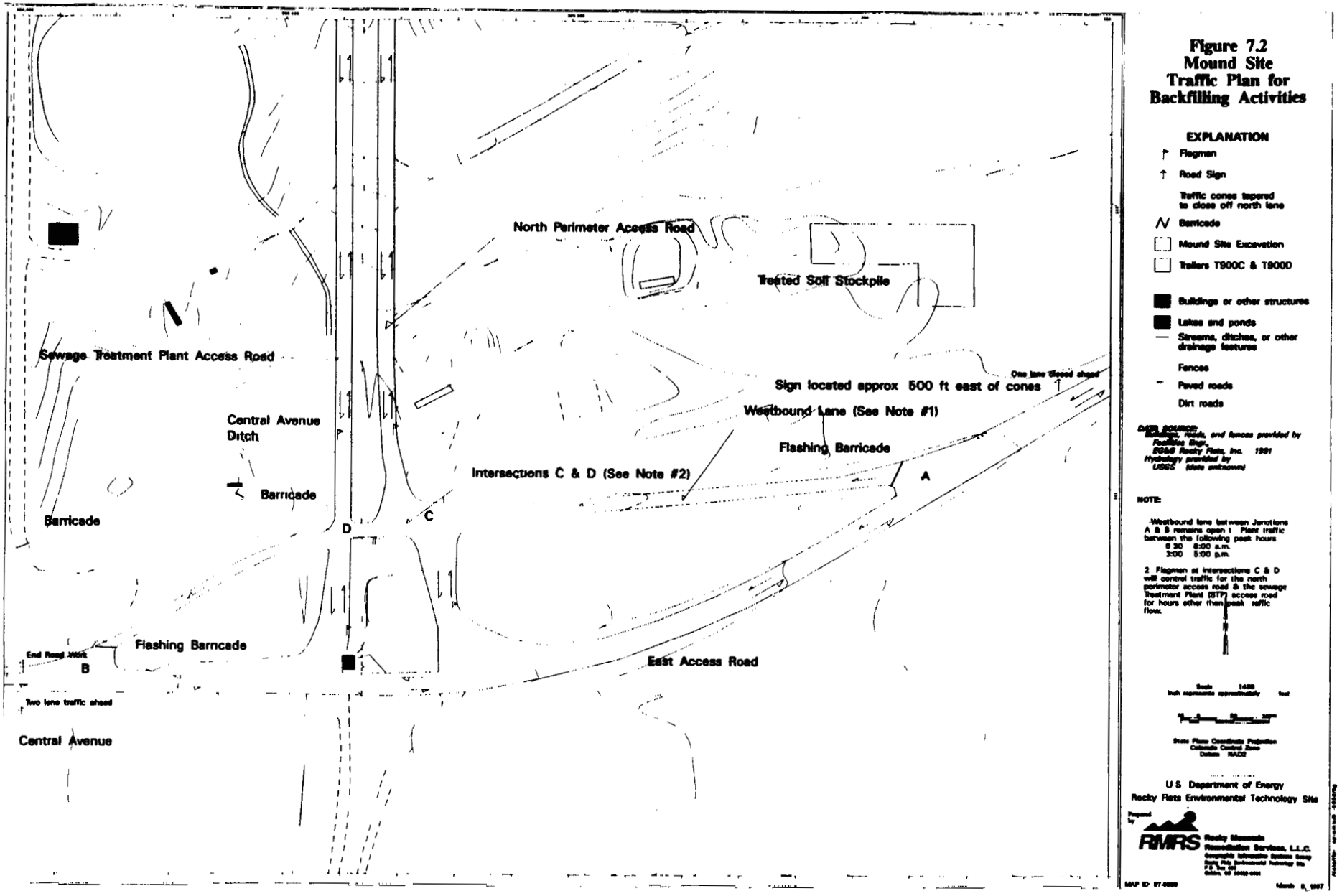


Figure 7.2
Mound Site Traffic Plan for Backfilling Activities

EXPLANATION

- Flagman
- Road Sign
- Traffic cones tapered to close off north lane
- Barricade
- Mound Site Excavation
- Trailers T900C & T900D
- Buildings or other structures
- Lakes and ponds
- Streams, ditches, or other drainage features
- Fences
- Paved roads
- Dirt roads

DATA SOURCE:
Buildings, roads, and fences provided by Facilities Dept., EG&G Rocky Flats, Inc. 1991
Hydrology provided by USGS (date unknown)

NOTE:

1. Westbound lane between Junctions A & B remains open to Plant traffic between the following peak hours
   6:30 8:00 a.m.
   3:00 5:00 p.m.

2. Flagmen at intersections C & D will control traffic for the north perimeter access road & the sewage Treatment Plant (STP) access road for hours other than peak traffic flows.

Scale 1:400
Inch represents approximately foot

State Plane Coordinate Projection
Colorado Central Zone
Datum NAD27

U S Department of Energy
Rocky Flats Environmental Technology Site

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97-RF-00920

February 18, 1997

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MOUND SITE IHSS 113, SOURCE REMOVAL PROJECT - APPROVAL TO MOVE TOPSOIL FROM IHSS 190 CENTRAL AVENUE DITCH FOR CULVERT EXTENSION NSD-001-97

In support of the Source Removal at the Mound Site Project a culvert extension along the Central Avenue ditch (Individual Hazardous Substance Site 190) is required to provide site access and to prevent surface water and groundwater infiltration into the excavation The existing culvert will be extended 220 feet to the east and approximately 2 to 6 inches of soil will be removed from the side-walls and bottom of the existing ditch Approximately 200 cubic yards of topsoil will be generated during this task During site reclamation, RMRS is proposing to re-grade the soil from IHSS 190 across the Mound Site excavation area for use as topsoil to promote re-vegetation during re-seeding operations On January 21 1997 four soil samples were collected from the Central Avenue ditch (IHSS 190) to provide additional information for the required hazardous waste determination (See Attached) The samples were analyzed for Volatile Organic compounds (VOCs) and metals In response to Kaiser-Hill Radiological Engineering, four additional soil composite samples were collected on January 30, 1997 for isotopic analyses (HPGe) followed by another six HPGe samples on February 10 1997. Based on the volatile organic analysis acetone was detected at 28 (ppb) in one sample. According to the laboratory acetone is a common laboratory contaminant None of the metals exceeded the minimum detection limit All radiological isotopes were detected below background levels Based on the Historical Release Report IHSS 190 is a chemical IHSS due to a caustic leak from Building 443 IHSS 190 is currently being addressed for No Further Action (NFA) and will be submitted in the Annual Update to Historical Release Report

Your concurrence will confirm that there are no remaining issues and RMRS may proceed with the relocation of IHSS 190 soils If you have any questions please give me a call at extension 5790 Thank you for your support of the RMRS Mound Site Source Removal Project

Nick Demos
Environmental Restoration
Rocky Mountain Remediation Services

WRS/aw

Attachment
As Stated

cc
S Newsome T690B

CONCURRENCE

Kaiser Hill Company Inc
Environmental Compliance

ALARA JOB REVIEW

(Job Review # 97-SITE-002)

SOURCE REMOVAL AT THE MOUND SITE (IHSS 113)

COPY

March 12, 1997

Prepared by _____ Date 3/12/97
S A Newsom, Health Physicist

Reviewed by _____ Date 3/12/97
J B Barroso, Rad Eng ER & WM Manager

Approved by _____ Date 3/12/97
G M Aldrich Rad End Project & Programs

TABLE OF CONTENTS

Section		Page
	TITLE PAGE	1
	LIST OF EFFECTIVE PAGES	2
1 0	THE ALARA EVALUATION PROCESS	3
2 0	MOUND PROJECT TASK DESCRIPTION	4
3 0	RADIOLOGICAL CONCERNS	5
4 0	OPTIONS CONSIDERED	6
5 0	CONTROLS TO BE IMPLEMENTED	7

1 0 THE ALARA EVALUATION PROCESS

Title 10, Code of Federal Regulations, Part 835, Occupational Radiation Protection (10 CFR 835) mandates an emphasis on As Low As Reasonably Achievable (ALARA) implementation at all DOE sites. Consistent with this regulation, Article 312 of the Site Radiological Control Manual (RCM) requires a formal radiological review of non-routine and complex work activities when established trigger levels are reached in order to ensure safety and maintain radiation exposures ALARA. The trigger levels required by the Site RCM are contained in 94-ALARA PLAN-0003, " ALARA Program Plan" The Source Removal Project at the Mound Site, herein referred to as the Mound Project, does not meet any of the trigger points listed in the ALARA Program Plan However this ALARA Job Review is being written to formally delineate the radiological requirements for the project

Radiological Engineering Procedures (REP) 1002, "ALARA JOB REVIEW", provides instructions for performing ALARA Job Reviews The ALARA Job Review typically consists of four major parts (1) Task Description, (2) Radiological Concerns; (3) Options Considered; and (4) Controls to be implemented In addition, an ALARA Person-Rem estimate is required if a dose-related trigger point is met, a Person-Rem Estimate is not required for the Mound Project The ALARA Job Review may also include dose calculations, bio-assay plans, and any other information which was used to develop the formal review

The ALARA Job Review shall be used to develop Radiological Work Permits (RWPs) as well as the other applicable plans and procedures to ensure that the radiological requirements are incorporated The RWP for the Mound Project will reference this ALARA Job Review and will require Radiological Engineering concurrence

2 0 MOUND PROJECT TASK DESCRIPTION

2 1 History

As stated in the Sampling and Analysis Plan to support the Source Removal at the Mound Site (RMRS 1997) the Mound Site is located north of Central Avenue, and east of the Protected Area fence Approximately 1,405 intact drums were placed at the Mound Site between April 1954 and September 1958 and covered with soil, thus generating a "mound" The drums originated from Buildings 444, 771, 776 883, and 888, and contained uranium, beryllium, hydraulic oil carbon tetrachlonde and tetrachloroethylene (PCE) Records also indicate that some of the drums contained low levels of plutonium

In 1970, the drums were removed from the Mound Site along with some radiologically contaminated soil Approximately 10 percent of the drums were thought to have leaked at the time of removal Solid material was shipped offsite for disposal and liquids were sent to Building 774 for processing No airborne radiological contamination was detected during the drum removal Soil from the excavation was graded and the excess was placed in the landfill Records do not indicate the volume of contaminants released to the soils at the Mound Site

2 2 Scope

As stated in the Site Specific Health and Safety Plan for the Source Removal at the Mound Site (RMRS, 1997) the scope of work will involve site preparation and subsequent excavation of approximately 400 to 1000 cubic yards of contaminated soil using standard excavation equipment The soil will be transported to and temporarily stockpiled in the Contaminated Soil Feed Stockpile (CSFS) located approximately 600 feet east of the Mound Site The CSFS is just south of where the thermal desorption treatment equipment will be mobilized to process the soil After excavation is completed contaminated soil will be treated using a low temperature thermal desorption remediation technology and stockpiled in the treated soil stockpile area Treated soil upon confirmed attainment of performance goals, will be backfilled into the excavation Reclamation of the stockpile, treatment and excavation area will be performed to return these areas to improved natural conditions

2 3 Task Steps

The Source Removal at the Mound Site will require site preparation, which will involve the installation of a culvert in the Central Avenue ditch minor road improvements and establishing work zones and equipment infrastructure The installation of a stormwater ditch and the removal of topsoil at the CSFS will occur next Then the excavation of approximately 400 to 1,000 cubic yards of contaminated soil at the Mound Site will be excavated and transferred to the CSFS at the T3/T4 site The excavated soils will be treated using a low vacuum low temperature thermal desorption unit (TDU) The treated soil is then returned to the excavation site This ALARA Job Review implements the radiological requirements from the time when the soil is excavated to the time when it is transferred to the T3/T4 site and also from the time that the treated soil is transported from the treatment site back to the excavation site

3 0 RADIOLOGICAL CONCERNS

Based on analytical sample results as summarized in the Proposed Action Memorandum (PAM) for the Source Removal at the Mound Site (RMRS, 1996), above-background concentrations of Americium-241, Plutonium-239/240, Uranium-233/234, Uranium-235, and Uranium-238 have been identified in surface / subsurface soils at the Mound Site The radiological concerns are the spread of contamination to personnel and equipment within and outside of the work area, and the potential internal worker exposure from a radioactive uptake The primary events that could lead to the above concerns are (1) disturbing the soil and consequently releasing radioactive material, (2) encountering and subsequently disturbing buried items which contain radioactive material. The above stated concerns associated with the Mound Site will be controlled by the use of a Radiological Work Permit (RWP), contamination detection instruments, perimeter and worksite air monitoring, dust suppression, bioassay, and external dosimetry Based on process knowledge and characterization data at the Mound Site, the total external exposure to workers is less than 5 mrem.

4 0 OPTIONS CONSIDERED

The options considered below will be addressed in further detail in section 5 0 "Controls to be Implemented"

4 1 Walk down of the Mound Project activities

4 2 Use of anti-contamination clothing

4 3 Use of full-face respirators

4 4 Full time RCT coverage and radiological surveys

4 5 Air Sampling

4 6 Engineering controls such as containments

5 0 CONTROLS TO BE IMPLEMENTED

5 1 A walk down of the project work sequence at the excavation site and at the Contaminated Soil Feed Stockpile will be required for the Mound Project. This is to ensure that problems are identified early on and are resolved prior to excavating the soil.

5 2 Soils that indicate >5000 cpm (approximately three times background) using a Field Instrument for the Detection of Low Energy Radiation (FIDLER) will constitute an action level for the excavation work as per the Radiological Work Permit (RWP), and must be segregated from the soils that indicate <5000 cpm Soil sampling of the identified soils >5000 cpm will be performed to determine if the isotopic analysis results indicate that nuclide content is in excess of the RFCA Tier II action level for that nuclide If the nuclide content in the identified soils is verified to be in excess of the Tier II action level, then these soils will be treated after the <5000 cpm soils have been treated in the TDU. After treatment in the TDU is performed the soils will be dispositioned appropriately

5 3 Individuals supporting the Mound activities within the radiologically controlled Soil Contamination Area (Exclusion Zone) will be required to wear anti-contamination clothing commensurate with area/equipment contamination levels. Anti-contamination clothing used will be consistent with that defined by the Health and Safety Plan, the Site Radiological Control Manual and current site procedures

5 4 Supplied air or Self Contained Breathing Apparatus (SCBA) respirators will be required as per the Health and Safety Plan for Industrial Hygiene concerns with the chemicals If respiratory protection requirements are downgraded, Radiological Operations will be notified to assure that respiratory protection is adequate for the radiological hazard

5 5 Full-time RCT coverage will be required Contamination surveys will be performed prior to, during, and at the completion of the work activities on personnel and equipment as necessary Rad Ops supervision and Radiological Engineering will evaluate the frequency for performing contamination surveys for the project.

The document entitled "Technical Basis for Posting and Radiological Control Requirements in Environmental Restoration Activities" dated March 5, 1997 shall be used for determining the posting and deposting requirements.

5 6 Air sampling will be performed to give qualitative indications of changing radiological conditions and to verify that airborne radioactivity levels have not exceeded the level set forth below At the contamination reduction zone (CRZ)-personnel support zone (PSZ) boundaries of the Mound Site, continuous low volume air sampling during excavation will be performed When the dirt is being excavated, perform air sampling as determined by Rad Ops supervision near the worker's breathing zones at the boundary of the exclusion zone (EZ) (CRZ) as close as possible to any dust clouds to ensure that airborne concentrations in those areas do not exceed 10% DAC and to serve as an early indicator of changing radiological conditions

As learned from the Source Removal Project at trenches T 3 and T-4, the air sampling

results can be greatly influenced by radon daughter products normally occurring in the atmosphere To screen out Radon problems one or more of the following approaches shall be utilized by Radiological Operations Supervision and/or Radiological Engineering

- Perform high volume air sampling with the Annular Kinetic Impactor (AKI)head in at least one location downwind from the excavation site outside of the EZ at the EZ CRZ boundary The AKI head has been shown to separate over 90% of the radon progeny from the air sampling filter media Perform a minimum of two grab samples per daily work shift

- Set up another high volume air sampling monitor at a downwind location from the excavation site outside of the EZ at the EZ CRZ boundary The air sampling should be performed at the same time frame as the AKI with a minimum of two grab samples performed during the daily work shift After the air sampling data has been analyzed (using the SAIC AP-2), a comparison of the data between the HVOL and the AKI can be used to qualitatively indicate if any measurable airborne radioactivity is due to DOE radioactive material

- Utilize the SAIC AP-2 hand held alpha analyzer to determine if the activity of the air sampling filter media is consistent with alpha radioactivity from naturally occurring Radon daughters, or from DOE radioactive materials

- Based on the analysis of the data Radiological Operations supervision and/or Radiological Engineering shall determine whether or not the area needs to be posted as an Airborne Radioactivity Area (ARA)

5 7 Engineering controls such as containments are not required for this project Due to the low concentration of activity in the soil no airborne radioactivity levels in excess of 10% DAC at the excavation site are expected to be generated Furthermore due to the nature of the operation containment of the soil as it is excavated is not practicable or necessary

5 8 During the thermal desorption operations continuous low volume air sampling will be performed outside the CRZ boundary When the soil is being moved perform high volume air sampling as determined by Rad Ops supervision near the worker s breathing zone at the boundary of the exclusion zone (EZ) (CRZ)to ensure that airborne concentrations in those areas do not exceed 10% DAC and to serve as an early indicator of changing radiological conditions At a minimum the high volume air sampling shall be performed twice during each work shift

Appendix D
Forms and Checklists to Support the Mound Site Source Removal

RMRS Rocky Mountain Remediation Services L.L.C. ...protecting the environment

Mound Site Source Removal Project
Sign-in/out Sheet
Date
Shift

Name	Company	Time In	Time Out

Mound Site Source Removal Project
Shift Relief and Turnover
Date
Shift

RMRS Rocky Mountain Remediation Services L.L.C

Equipment/Systems Status Board and Maintenance

Lock out/Tag out Y/N

Treatment Summary - Oven Status

OVEN	RUN	BATCH	COMMENTS
1			
2			
3			
4			

Status from Previous Shift

Unusual or Off Normal Events

Incidental Spills. Y/N

Injuries/Accidents Y/N

Radiological Concerns Y/N

Rad Eng

Hazardous Waste Y/N

Plan of the Day

Shift Relief/Turnover Acceptance

Offgoing Field Supervisor

Ongoing Field Supervisor

CHECK LIST FOR RESTART OF MOUND OPERATIONS

In the event that an unanticipated hazard or condition is encountered ensure each of the following is addressed The Project Manager is to initial and date or mark Not Applicable (NA) after each item

1 Do the approved site specific Health and Safety Plan (HASP) and the task specific Activity Hazard Analyses (AHAs) adequately address the new hazard or condition? _____

1a Has the HASP been modified to adequately address the new hazard or condition? _____

1b Has the AHA been modified with additional information to discuss the new hazard or condition? _____

2 Does the new hazard or condition change the approved the Radiological Work Permit (RWP)? _____

2a If so has a new RWP been issued to address the new hazard or condition?

3 Was a Radiological Stop Work issued? _____

3a If so was the Radiological Stop Work lifted by Radiation Safety? _____

4 Does the new hazard or condition change the Auditable Safety Analysis (ASA)? _____

4a If so has a new ASA been issued to address the new hazard or condition? _____

5 Does the new hazard or condtion affect air quality? _____

5a If so has new site data been provided to Kaiser Hill Air Quality Management Group? _____

DESCRIPTION/RESOLUTION

NOTES

RMRS	Vice President Environmental Restoration	Date
RMRS	Mound Site Project Manager	Date
SSOC	Radiological Engineer (if applicable)	Date
SSOC	Radiological Section Manager (if applicable)	Date
RMRS	Health and Safety Supervisor	Date

MOUND SITE SOURCE REMOVAL PROJECT

Industrial Hygiene Instrument Calibration Log

Instrument Ametek MK 3

MK 3 Dosimeter Serial Number _____ Date Calibrated _____ Calibration Due Date _____

AC-4 Calibrator Serial Number _____ Date Calibrated _____ Calibration Due Date _____

Date	Battery OK Yes/No	Pre-Calibration (94dBA)				Post-Calibration (94dBA)				Comments
		Time	Response	Pass/Fail	Initials	Time	Response	Pass/Fail	Initials	

Logbook Control Number ER-IHSS113 LB-97-186

MOUND SITE SOURCE REMOVAL PROJECT

Industrial Hygiene Instrument Calibration Log

Instrument Foxboro TVA 1000

Date Calibrated _____

Calibration Due Date _____

Serial Number _____

Date	Time	Battery OK Yes/No	PID Calibration		FID Calibration		PID Performance Check		FID Performance Check		Initials	Comments
			Isobutylene Concentration	Pass/Fail	Methane Concentration	Pass/Fail	Response	Pass/Fail	Response	Pass/Fail		

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Logbook Control Number ER IHSS113 LB 97 186

MOUND SITE SOURCE REMOVAL PROJECT

Industrial Hygiene Instrument Calibration Log

Instrument MSA Passport

Date Calibrated ________

Calibration Due Date ________

Serial Number ________

Page____of____

Date	Time	Calibration Gases	Optimum Calibration Gas Response	Allowable Calibration Gas Response	Response	Pass/Fail	Initials	Comments
		Oxygen	15%	13 17%				
		Carbon Monoxide	300 ppm	270 330 ppm				
		Hydrogen Sulfide	10 ppm	9 12 ppm				
		Lower Explosive Limit	58%	52 64%				
		Oxygen	15%	13 17%				
		Carbon Monoxide	300 ppm	270 330 ppm				
		Hydrogen Sulfide	10 ppm	9 12 ppm				
		Lower Explosive Limit	58%	52 64%				
		Oxygen	15%	13 17%				
		Carbon Monoxide	300 ppm	270 330 ppm				
		Hydrogen Sulfide	10 ppm	9 12 ppm				
		Lower Explosive Limit	58%	52 64%				
		Oxygen	15%	13 17%				
		Carbon Monoxide	300 ppm	270 330 ppm				
		Hydrogen Sulfide	10 ppm	9 12 ppm				
		Lower Explosive Limit	58%	52 64%				

Logbook Control Number ER IHSS113 LB 97 186

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MOUND SITE SOURCE REMOVAL PROJECT

Industrial Hygiene Instrument Calibration Log

Instrument MIE PDM 3 Miniram

Date Calibrated _____

Serial Number _____

Calibration Due Date _____

Date	Time	Battery OK Yes/No	"Off" Displayed Yes/No	Z Bag Calibration Completed	Initials	Comments

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MOUND SITE SOURCE REMOVAL PROJECT

Industrial Hygiene Air Sampling Form

GENERAL INFORMATION*

Building _____ Room/Area _____ Work Package Number _____ Date_____

Description of Work _____

_____

Engineering Controls _____

_____

Observations Strategies Worker Comments _____

_____

_____

PERSONNEL INFORMATION*

Person Sampled _____ Employee # _____ Job Title _____

Company _____ Supervisor _____

Specific Task Performed _____

Personal Protective Equipment Worn _____

_____

SAMPLING INFORMATION*

Sample Number _____ Type of Sample (circle) Personal/Area/Field Blank/Media Blank

Calibrator _____ Serial # _____ Date Calibrated _____ Date Due _____

Sampling Pump _____ Serial # _____

Media _____ Lot # _____

Pre Calibration Flow Rate _____ Post Calibration Flow Rate _____ Average Flow Rate _____

Time On _____

Time Off _____ >>>>>Run Time _____ Total Time _____ Calibration Temp ____°F

Time On _____

Time Off _____ >>>>>Run Time _____ Total Volume _____ __ Site Temp ____°F

Time On _____

Time Off _____ >>>>>Run Time _____ Analytical Method(s) _____

Representative Exposures

Name	Employee #	Name	Employee #
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

INDUSTRIAL HYGIENE

Industrial Hygienist _____ Employee # _____ Company _____ Date _____

Peer Review _____ Employee # _____ Company _____ Date _____

* Use back for additional information

Logbook Control Number ER IHSS113 LB 97 186

MOUND SITE SOURCE REMOVAL PROJECT

Daily Health and Safety Log

Page_____of_____

Date	Time	Observations

Logbook Control Number ER-IHSS113-LB-97 187

HSS _____/_____ Date_____

(print) (signature)

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MOUND SITE SOURCE REMOVAL PROJECT

Daily Industrial Hygiene Air Monitoring Log

Page____of____

Date	Time	Location	TVA PID (ppm)	TVA FID (ppm)	Mini Ram (mg/m^3)	Noise (dBA)	CGI (%LEL)	HNU PID (ppm)	Other	Activity/Action

Logbook Control Number ER IHSS113 LB 97 187

Foxboro TVA 1000 S/N _____

MIE MiniRam S/N _____ HNU DL 101 2 S/N _____

Ametek Mark 3 S/N _____ Other _____

MSA Passport S/N _____

HSS _____/_____ Date_____

(print) (signature)

C WPDOCS MOUND IHMONIT

MOUND SITE SOURCE REMOVAL PROJECT

Daily Wind Speed/Cold Stress Log

Page_____of_____

Date	Time	Temp (°F)	Wind Speed (mph)	Wind Chill (F°)	Action

Logbook Control Number ER-IHSS113-LB-97 187

HSS _____/_____ Date_____

(print) (signature)

MOUND SITE SOURCE REMOVAL PROJECT

Daily WBGT Log

Page_____of_____

Date	Time	WBGT (°F)	Action

Logbook Control Number ER IHSS113 LB 97 187

WBGT S/N _____

HSS _____/_____ Date_____

(print) (signature)

C \WPDOCS\MOUND\WBGTLOG

MOUND SITE SOURCE REMOVAL PROJECT

Operator s Daily Powered Industrial Truck Inspection Checklist

Truck Number _____ Make. _____ Date. _____

Hour Meter Reading Start _____ End _____ Hours on Shift _____

Check Each Item If OK, Write OK	1st Shift	2nd Shift	3rd Shift	Explain Below If Not OK Or Any Other Action Taken
ALL TRUCKS				
Steering				
Horn				
Lights				
Backup Alarm				
Brakes				
Tires				
Hoist Cylinder				
Tilt Cylinder				
Hydraulic Oil Level				
Hydraulic Controls				
Forks				
Limit Switches				
Safety Belts				
Fire Extinguisher				
GASOLINE DIESEL OR PROPANE TRUCKS				
Battery				
Fuel				
Water/Antifreeze				
Engine Oil Level				
Oil Pressure				
Remarks				

Logbook Control Number ER-IHSS113-LB-97 187

Operator _____ / _____ Date _____
(print) (signature)

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MOUND SITE SOURCE REMOVAL PROJECT

Employee Notification of Personal Air Sampling Results

REF# DATE SENT DATE RECEIVED

EMPLOYEE EMPLOYEE NUMBER SUPERVISOR

TYPE OF MONITORING Personal Air Sampling for Airborne Organics

PROJECT Mound Site Source Removal TASK

SAMPLE NUMBER INDUSTRIAL HYGIENIST Kenneth Gillespie

PERSONAL PROTECTIVE EQUIPMENT WORN Level B Respiratory Protection

MONITORING RESULTS Results are reported in parts per million (ppm) The sample concentration shows the levels of airborne organic vapors present during the sampling time For sampling times less than eight hours the Time Weighted Average (TWA) was calculated based on zero exposure to airborne organic vapors for the time period which was not sampled The TWA is a time-weighted average concentration to which most workers may be exposed to for a normal 8-hour workday and a 40-hour workweek without suffering adverse health effects PEL/TLV TWA refers to the most conservative limit set by the Occupational Safety and Health Administration (OSHA) which is the PEL or the American Conference of Governmental Industrial Hygienists (ACGIH) which is the TLV The mixture PEL/TLV TWA takes into account the combined effects of two or more hazardous substances on the same target organ All samples were analyzed by an AIHA accredited lab

Date	Compound	Sample Concentration (ppm)*	Calculated TWA (ppm)	PEL/TLV TWA (ppm)	PEL/TLV TWA Exceeded	Mixture PEL/TLV TWA Exceeded
	Carbon Tetrachloride					
	Methylene Chloride					
	Tetrachloroethylene					
	Trichloroethylene					

* < Less than the laboratory detection limit

If you have any questions or would like to discuss this information further please contact Peggy Schreckengast at extension 6790 or pager 3059

Please sign below to show that you have received this information Please make a copy for your records and return the signed original to Peggy Schreckengast at T891C A copy of this record will be sent to Occupational Health

EMPLOYEE SIGNATURE _____ DATE _____

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Occupational Health

Logbook Control Number ER IHSS113 LB 97 188

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MOUND SITE SOURCE REMOVAL PROJECT

Employee Notification of Noise Dosimetry Results

REF# DATE SENT DATE RECEIVED

EMPLOYEE EMPLOYEE NUMBER SUPERVISOR:

TYPE OF MONITORING Personal Noise Dosimetry

PROJECT Mound Site Source Removal TASK

SAMPLE NUMBER INDUSTRIAL HYGIENIST Kenneth Gillespie

PERSONAL PROTECTIVE EQUIPMENT WORN

DOSIMETRY RESULTS Results are reported in decibels on the A-weighted scale (dBA) The average noise level shows the average noise levels during the time monitored For monitoring times less then eight hours, the Time Weighted Average (TWA) was calculated based on zero exposure to high noise levels the remainder of the workday The TWA is a time-weighted average noise level to which most workers may be exposed to for a normal 8-hour workday and a 40-hour workweek without suffering adverse health effects. The maximum noise level shows the maximum noise level during the time monitored

Date	Average Noise Level (dBA)	Calculated TWA (dBA)	OSHA TWA (dBA)	OSHA TWA Exceeded?	Maximum Noise Level (dBA)	Maximum Noise Level >85dBA

AVERAGE NOISE LEVEL This noise level is considered *(high/low)* compared to the Occupational Safety and Health Administration (OSHA) allowable TWA of 85dBA However, since you were exposed to this level for only *(#)* minutes your calculated TWA was *(#)*dBA assuming you were not exposed to high noise levels the remainder of the workday At RFETS when the TWA exceeds 85dBA, affected personnel must participate in the Hearing Conservation Program

MAXIMUM NOISE LEVEL. The maximum noise level measured was *(#)*dBA. At RFETS, when noise levels in the work area exceed 85 dBA regardless of duration hearing protection is required to reduce the exposure to below 85dBA

If you have any questions or would like to discuss this information further please contact Peggy Schreckengast at extension 6790 or pager 3059

Please sign below to show that you have received this information Please make a copy for your records and return the signed original to Peggy Schreckengast at T891C A copy of this record will be sent to Occupational Health

EMPLOYEE SIGNATURE _____ DATE _____

c
Occupational Health

Logbook Control Number ER-IHSS113-LB 97-188

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NEW WASTE CONCEPTS

1401 FREMONT PIKE
SUITE 10
PERRYSBURG OH 43551
USA
419/872 8160
800/359-2783
419/837 2692 FAX

New Waste Concepts

ConCover®

Operator Training /Certification Manual

New Waste Concepts
CAPS Preventitive Maintenance Schedule

Model _____ Serial # _____ Pump Model _____ Serial # _____

Machine Location _____ Mechanic _____

Machine Hours/Out ___ In ___ Machine Hours/Out ___ In ___ Machine Hours/Out ___ In ___ Machine Hours/Out ___ In ___

Machine Hours/Out ___ In ___ Machine Hours/Out ___ In ___ Machine Hours/Out ___ In ___ Machine Hours/Out ___ In ___

Date _____ _√_ OK _A_ Adjustment Made _X_ Pi Requires Additional Work

Function	50 Hours	100 Hours	150 Hours	200 Hours	250 Hours	Additional	
Slurry Pump						Hours	Years
	Initial Code	Initial Code	Initial Code	Initial Code	Initial Code		
Remove Face Plate							
Inspect Idler Pin							
Inspect Idler Gear							
Inspect & clear the grease port/Idler Pin							
Inspect tolerance between Idler Gear & Idler Pin							
Inspect tolerance between Rotor & Pump Case							
Clear any material from Cavities in the Pump Case							
Engine							
Change Engine Oil SAE 10W30							
Clean Air Element Flnn # 007739							
Clean or Replace Fuel Filter Flnn JDAR 50041							
Check Batt Electrolyte Level							
Check Fan Belt Tightness							

New Waste Concepts
CAPS Preventitive Maintenance Schedule

_√_ OK _A_ Adjustment Made _X_ Pi Requires Additional Work

Return Filter CAPS 900 & 1200 Finn Part # 21618							
Return Filter CAPS 1700 Finn Part # 8529							
Return Filter CAPS 2800 & 3300 Finn Part # 11869 Oil Gulf 46 AW Mobil DTE25 or Shell Tellus 46							
Replace Breather Filter, CAPS 1700 2800, and 3300 every 500 hours Finn Part # 11784							
Remove and clean the suction filter every 500 hours of operation							
Check Lines and fittings							

Gearbox

Drain out initial oil first 50 hours of operation							
Flush gearbox w/an approved non flammable non toxic solvent							
Refill with Mobil SHC 630 ISO Grade VG 220 or Equal synthetic lubricating oil							
Change oil every 2500 hours or yearly whichever occur first							

CAPS Machine Daily Start-up

The CAPS machine (ConCover® All Purpose Sprayer) is the mixing and application equipment which is used to spray ConCover® Before start-up begins It is imperative that site personnel invest the time to read and familiarize themselves with the operators manual provided with the equipment

Pre-Start Check

The sequence listed below is intended to be used as a tool for the daily routine and should not be used in place of the operators manual to familiarize site personnel with the machine

1 Check engine oil and fuel - refer to fuel and lubricant section of the operators manual

2 Grease areas on machine marked Service daily"

3 Once a week, grease areas marked Service Weekly

4 **Before starting, open the recirculation valve, close the discharge valve, disengage the clutch, and place the agitator control in the neutral position**

5 Turn ignition switch to the on position The magnetic safety switch button on thepanel should pop out

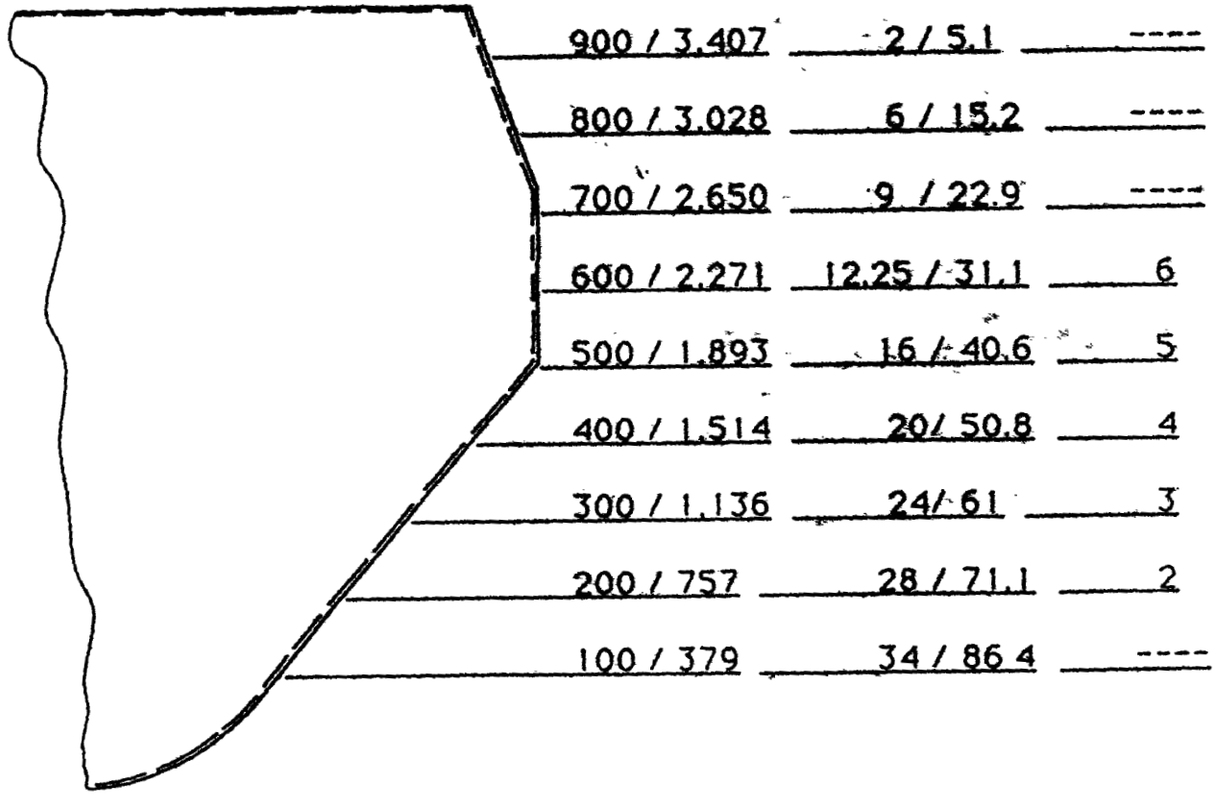
6 Engage starter to turn over engine At the same time depress and hold the magnetic switch button After the engine has run for 10 seconds the magnetic switch should stay engaged when you remove your thumb from the button

* Note *Low oil pressure or high water temperature will disengage this switch and shut off the engine The volt meter indicates whether the alternator is charging or not*

NEW WASTE CONCEPTS

7401 FREMONT PIKE
SUITE 10
PERRYSBURG OH 43551
U S A.
419/872-8160
800/359 2783
419/837 2692 FAX

CAPS 900 Tank Calibration



Gal. / Liter	Inch / Cent.	ConCover
900 / 3,407	2 / 5.1	----
800 / 3,028	6 / 15.2	----
700 / 2,650	9 / 22.9	----
600 / 2,271	12.25 / 31.1	6
500 / 1,893	16 / 40.6	5
400 / 1,514	20/ 50.8	4
300 / 1,136	24/ 61	3
200 / 757	28 / 71.1	2
100 / 379	34 / 86 4	----

Note When measuring the volume of material in the tank, measure downward from the top of the tank.

ConCover® Application Procedure

To apply the ConCover you will start by reviewing the area to be covered and construct a plan to adequately cover the area. To assure that the entire area is covered plan to spray from at least two opposing angles This will ensure that shadowing which is caused by spraying from only one angle, will not occur

1 Determine how you are going to cover for that day

2 Disengage the pump close the recirculation valve and open the cannon valve

3 Attach the long distance fan nozzle to the cannon engage the pump and begin spraying the areas farthest away from the machine Note *By spraying the farthest areas first, a ny material which falls out of the stream will settle on the area to be covered and help conserve the amount of material needed to cover the area*

4 Once you have sprayed the farthest area, disengage the pump and replace the long distance fan nozzle with the short distance wide angle nozzle to cover the areas close to the machine

5 Relocate the machine at an opposing angle and repeat the procedure from the farthest to the closest areas to be covered Note *For areas that prove to be difficult to cover with the cannon it may be necessary to use the hose*

Using the Hose

CAUTION. **The recirculation valve must be open when using the hose If the valve is not open, extreme heat will occur resulting in damage and / or bodily injury**

To use the hose

1 Open the recirculation valve and the hose valve which is located near the pump

2 Pull out the hose to the desired spraying location

3 Signal to the person at the machine to engage the pump At this point the material will be going through the recirculation back into the tank

4 Open the valve on the end of the hose and at the same time the operator at the machine will use the engine throttle to control the amount of material coming out of the hose

5 When you have completed using the hose disengage the pump and reel the hose back on to the spool

ConCover Certification Evaluation

This evaluation is graded on a scale of 1 to 5, with one being a low score and five being a high score In order to become certified to use ConCover, the persons being evaluated must obtain at least a four on each item in the evaluation.

Application Equipment

Safety

_____ Is familiar with the operators manual

_____ Identifies and understands all caution stickers on machine.

_____ Worked on and around the machine in a safe manner.

_____ Wore a dust mask and goggles when loading ConCover® into the machine.

_____ Site workers understand that the tank of the CAPS machine is classified by the OSHA Confined Space Standard CFR 1910 146 as a confined space and know not to enter without following an established confined space entry procedure provided by their safety personnel.

Engine start-up

_____ Checked oil

_____ Serviced grease fittings as required

_____ Had recirculation valve opened

_____ Had discharge valve closed

_____ Had clutch disengaged

_____ Had agitator control in the neutral position

_____ Started engine

Demonstrated proper lever and valve settings

_____ Engaged agitation system forward/reverse.

_____ Cannon On/Off

_____ Recirculation On/Off

_____ Hose On/Off

_____ Controlling hose pressure using recirculation / throttle

_____ Filled tank with the correct amount of water using tank measurement as well as gallon / liter chart and tape measure

_____ Determined the proper amount of ConCover 180™ to be added to the water as 6 A bag and 2 B ' bag per every 100 (379 liters) gallons of water

_____ While adding the A bags the product was recirculating through the pump

_____ When adding the B bags the recirculation was turned off

_____ Demonstrated the proper speed setting for the agitation system during mixing

_____ Added ConCover A and B bags at an acceptable rate

_____ Correctly foamed the product. See equipment use section foam generator

Mixing and measuring ReJeXit™

_____ Using the provided water chart an a measuring device filled tank with correct amount of water

_____ Determined the correct amount of materials to add to tank.

_____ Added ReJeXit materials to tank at an acceptable rate

_____ Mixed the batch for ten minuets prior to application

Application / Record Keeping

Application

_____ Operator verbally explained an acceptable method for this application

_____ Operator demonstrated the proper spraying technique of allowing the material to rain down on to waste face as opposed to spraying directly into the waste

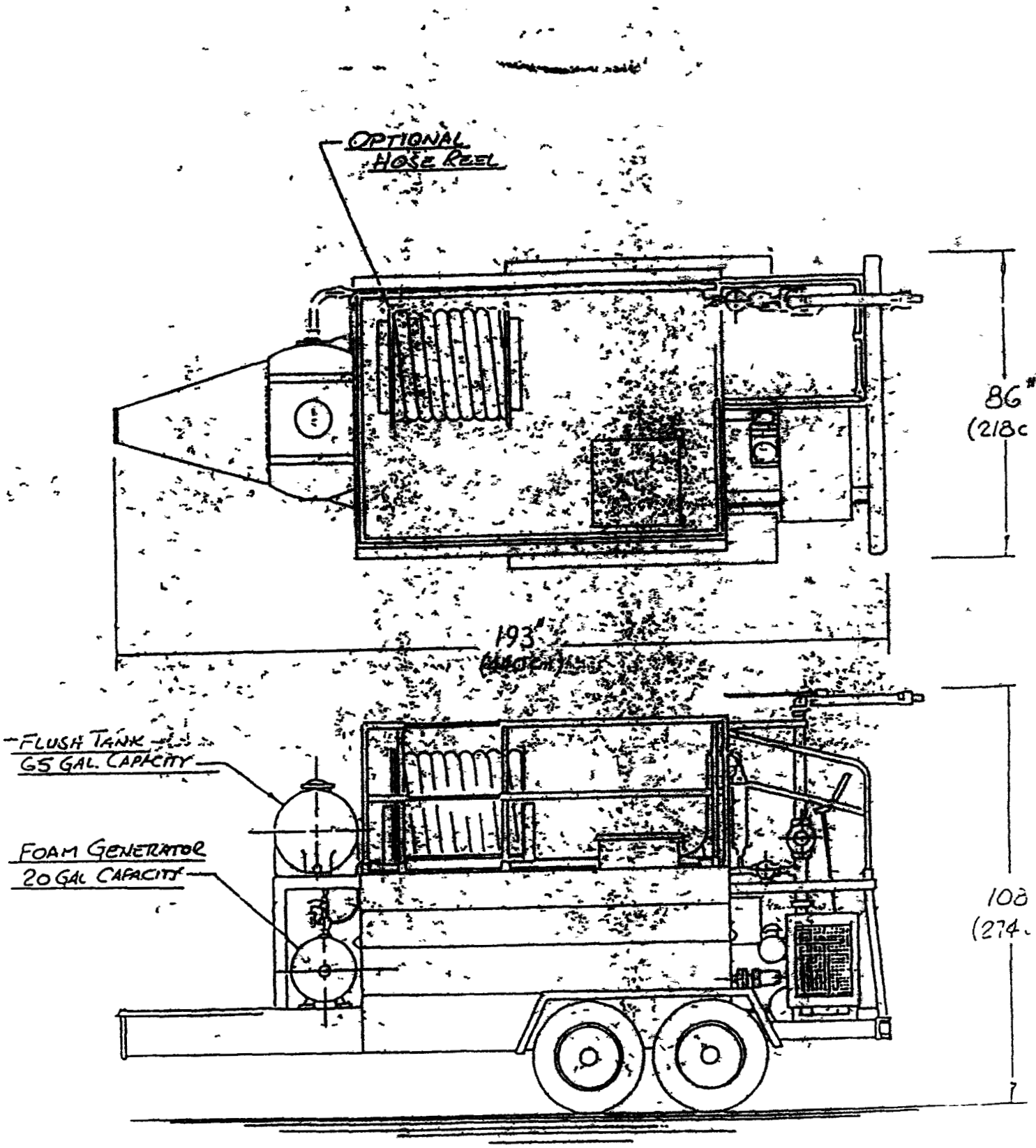
_____ Operator sprayed ConCover® from enough angles to achieve a total cover of the the waste face

Record Keeping

_____ Operator properly filled out record keeping form

_____ _____

Sign Date Operator Sign Date Instructor



-CAPS 900-"180' SPRAYER

MATERIAL SAFETY DATA SHEET

Trade Name ConCover® Remediation "A" Bag

Section I General Information

Item Name: Earthen material blend/natural cellulosic polymer
Final product is a fibrous slurry
Classification # 2508 10 0000

Manufacturer: New Waste Concepts
7401 Fremont Pike
Perrysburg, Ohio 43551
(419) 872-8160

Date MSDS Prepared: February 6, 1996
Last Review Date: February 6, 1996
MSDS Preparers Name/Address: Prepared by manufacturer

Unit of Issue/Container Type: Tote sacks or reinforced paper bags, various weights.

Product Description. Binding material blended with natural earthen materials; biodegradable organic compounds with other inert material and fibrous, cellulose based materials. Respirable dusts are present.

Section II Ingredient/Identity Information

Proprietary (Y/N) Y

Ingredient	Composition (%)	CAS #	Exposure Limits (TWA)
silica crystalline quartz	2-6 (<2 respirable)	14808-60-7	2.5 mg/m³ (OSHA PEL)
non-toxic respirable dust	n/a	n/a	15 mg/m3 (OSHA PEL) 10 mg/m3 (ACGIH TLV) 5 mg/m3 (resp frcn, OSHA)

Section III Physical/Chemical Characteristics

Appearance and Odor: Greyish/white fine powder with no distinctive odor

Boiling Point.	n/a
Melting Point.	n/a
Vapor Pressure	n/a
Vapor Density	n/a
Specific Gravity	n/a
Decomposition Temperature	n/a
Evaporation Rate	n/a
Solubility (H_2O)	n/a
Percent Volatiles by Volume	0
Viscosity	n/a
pH	n/a

Radioactive (Y/N). N
Ferromagnetic (Y/N): N

Section IV Fire and Explosion Hazard Data

Flash Point: n/a
Lower Explosive Limit: n/a
Upper Explosive Limit: n/a
Extinguishing Media/Methods: Use dry chemical, CO_2, AFFF (foam), or water
Special Fire Fighting Precautions: None
Unusual Fire/Explosive Hazards: Suspended dust/air mixture may ignite if concentrated and in the presence of ignition source. Do not mix product in an enclosed environment.

Section V Reactivity Data

Stable (Y/N) Y
Conditions to Avoid: No off gassing produced when mixing with water.
Materials to Avoid: Do not mix or store with strong bases (e.g. hydroxides). Keep away from oxidizers.
Hazardous Decomposition Products: Upon decomposition, may emit fumes of SO_x

Section VI Health Hazard Data

Routes of Entry
- Inhalation (Y/N). Y
- Skin (Y/N): N
- Ingestion (Y/N): N
- Other N

Contact Eye/Skin Hazards: Y, Dust may cause eye irritation.
Acute Overexposure Symptoms: Acute inhalation may produce lung, nose, and throat irritation. Systemic symptoms may include dyspnea and liver effects.
Chronic Overexposure Symptoms: Inhalation of dust over time may cause delayed pulmonary fibrosis disease.
Carcinogenicity Data. Silica dust is an experimental carcinogen and tumerogen (Dangerous Properties of Industrial Materials, Sax/Lewis, 7th ed.). Limited evidence of carcinogenic effects of crystalline silica in humans (IARC Monographs on the Evaluation of the Carcinogenic Risks of Chemicals to Humans, vol. 42, 1987).
Emergency Treatment/ First Aid Procedures. Gross Inhalation - Move victim to fresh air environment. Seek immediate medical attention.
Gross Ingestion - No oral toxicity known. May cause intestinal blockage.
Skin Contact - Wash affected areas with soap and water
Severe Eye Contact - Flush eyes with water for 15 minutes Seek medical attention.

Section VII Precautions for Safe Handling and Use

Personal Protective Equipment (Routine Use)

Respiratory Protection Respirators are not required when using this product under routine outdoor conditions. In cases when excessive dusts might be periodically created, use NIOSH/MSHA approved full or half face respirators with dust cartridges when pouring and mixing product.

Gloves. Recommend latex, butyl rubber, or nitrile gloves

Eye Protection Safety goggles or glasses recommended

Other Recommend Tyvek suits or coveralls

Work Practices:	This product is to be used in outdoor environments Exposures to hazardous components are not expected to exceed permissible limits during routine daily use Minimize dusting whenever possible Do not use this product in confined or enclosed environments. Do not use in the presence of flames or sparks.
Ventilation.	If routine indoor use is required, or in the presence of excess dust generation, local exhaust ventilation is recommended
Spill/Release Procedures	Excess spilled product, if uncontaminated, may be cleaned and disposed of as ordinary waste No special clean up procedures are recommended
Neutralization Procedures	n/a
Waste Disposal Procedures	This material is not a listed hazardous waste, nor does it exhibit any hazardous waste characteristic.
Storage/Handling Procedures	Store product in a dry environment, away from strong bases and oxidizers
Other Health Hazard Precautions	Use proper lifting procedures when attempting to dispense product from 50 lb bags.

Reviewed and Approved/Date 2/9/96

Thomas J Nachtman
President

MATERIAL SAFETY DATA SHEET

Trade Name. ConCover® "B" Bag

Section I General Information

Item Name:	Recycled paper and fiber
Manufacturer	New Waste Concepts, Inc 7401 Fremont Pike, Suite 10 Perrysburg, OH 43551 (419) 872-8160
Date MSDS Prepared.	August 16, 1995
Last Review Date:	August 16, 1995
Msds Preparers Name/Address	prepared by manufacturer
Unit of Issue/Container Type	Reinforced paper bags, 35 lbs.
Product Description	Recycled cellulose
Multiple Part Product (Y/N)	Y
Description of Related Components:	ConCover® "A" Bag

Section II Ingredient/Identity Information

Proprietary (Y/N) Y

Section III Physical/Chemical Characteristics

Appearance and Odor	Fiberous with brown or natural green color
Boiling Point:	N/A
Melting Point:	N/A
Vapor Pressure	N/A
Vapor Density	N/A
Specific Gravity	N/A
Decompositon Temperature	N/A
Evaporation Rate	N/A
Solubility (H20)	Slightly Soluble
Percent Volatiles by Volume:	N/A
Viscosity	N/A
pH	N/A
Radioactive (Y/N).	N
Ferromagnetic (Y/N)	N

Section IV Fire and Explosion Hazard Data

Flash Point.	N/A
Lower Explosive Limit	N/A
Upper Explosive Limit	N/A
Extinguishing Media/Methods	Use CO2, dry chemical foam, or water
Special Fire Fighting Methods	None
Unusual Fire/Explosive Hazards	Keep away from strong basic materials such as sodium, potassium hydroxides Keep away from oxidizers

Section V Reactivity Data

Stable (Y/N)	Y
Conditions to Avoid.	Heat, fire, water
Materials to Avoid.	Keep away from oxidizers and strong basics
Hazardous Decomposition Products	CO2, CO3

Section VI Health Hazard Data

Routes of Entry

Inhalation (Y/N)	Y
Skin (Y/N)	N
Ingestion (Y/N)	N
Other	N

Contact Eye/Skin Hazards	N/A
Acute Overexposure Symptoms	Avoid prolonged inhalation of fiber material
Chronic Overexposure Symptoms	

Emergency Treatment/ First Aid Procedures

Gross Inhalation	Move victim to fresh air environment. Seek medical attention.
Gross Ingestion	No oral toxicity known
Skin Contact.	Wash affected areas with soap and water
Severe Eye Contact	Flush eyes with water for 15 minutes Seek medical attention

Section VII Precautions for safe Handling and Use

Personal Protective Equipment (Rountine Use)

Respiratory Protection	Face shield recommended but not required.
Gloves	Recommend latex, butyl rubber, or nitrile gloves
Eye Protection	Safety goggles or glasses recommended.
Other	None
Work Practices	This product is to be used in outdoor environments Do not use in the presence of ignition sources
Ventilation.	Use outdoors
Spill/Release Procedures	Sweep material into drums and dispose of in accordance to local, state and federal laws Does not need to be reported to CERCLA or RCHA
Neutralization Procedures	N/A

REVEGETATION INSTRUCTIONS FOR MOUND/TRENCHES PROJECT

Several DOE Orders (4300 1B, 6430 1A, 5400 1) require the stripping and stockpiling of topsoil from work areas prior to the start of construction work and revegetation with native plant species at the end of the work. Topsoil is to be stripped to a minimum depth of 8 to 10 inches to ensure that sufficient soil is stockpiled for subsequent revegetation efforts. Topsoil stockpiles are to be placed such that erosion can be controlled. Surface waters must be protected from siltation from stockpiles and other disturbed areas in the event of runoff from precipitation. Additionally, soil stockpiles at the Site must be protected from wind-borne weed seed sources. This is best accomplished by covering the stockpile with a tarp for short-term storage, or planting temporary vegetation for longer-term storage. If a stockpile will remain unused for over a year, active weed control (i e , herbicide application) will also be required. Weed exclusion is necessary to help in the sitewide noxious weed control effort. Should importation of topsoil from another location be necessary, every effort must be made to ensure that that location is weed-free to prevent importation of noxious weed seeds.

General revegetation directions for different revegetation needs at the Site have been developed by Site ecologists based on recent experience here. Customized seed mixtures for each site help ensure that appropriate species are planted, and that non-endemic species are not introduced. The current revegetation strategy is to restore the native prairie grasslands as closely as possible to preexisting conditions rather than to change the character through reclamation and remediation. As exhibited by the "reclamation" acreage in the southeastern portion of the Site, planting aggressive non-endemic species at the Site can drastically change the native prairie. Even after two decades, the planted species have allowed little encroachment of native forbs and grasses into the reclaimed area.

Revegetation efforts have yielded mixed results for different revegetation efforts at the Site. Evaluation of the success of some early revegetation efforts has provided some useful information to help modify subsequent efforts. Substitution of hydromulch for soil is not a viable option. If no topsoil is available, topsoil must be procured from off-site to allow placement of a minimum of 6 to 8 inches of topsoil over the subsoil at the disturbance. Purchasing topsoil from off-site may be necessary for the mound project if insufficient topsoil is reserved.

Once a disturbance has been filled and re-contoured, the subsoil is to be ripped or scarified to a depth of 8 inches to relieve soil compaction from heavy equipment before topsoil placement. Topsoil must then be placed as evenly as possible in a 6- to 8-inch layer for imported soil or as evenly as possible where native soil was reserved from the site. If reserved soil is used, all that is available must be applied. Care should be taken during topsoil application to avoid compaction of this layer.

The use of fertilizers for revegetation at the Site is not recommended. The plants in the recommended revegetation mixture are adapted to low nitrogen levels and do better under these conditions. Additionally, the undesirable weed species are encouraged by fertilizers and weed control costs can be reduced if fertilizers are unavailable to these species.

Subsequent to topsoil placement seed must then applied directly into the topsoil Seeding may be performed using a no-till drill or broadcast seeding depending on slope areal extent of the disturbance soil conditions (much of the soil at the Site is too rocky for drill-seeding) and other site-specific factors If the seed has been broadcast the reseeded area is to be drag-chained or raked to ensure that the seed is buried prior to mulching

Due to the large area and wind-exposure involved with the mound/trenches work areas hydromulching is necessary for this location Certified weed-free straw or hay mulch would not remain in place long enough to ensure revegetation success unless applied as a tackified hydromulch Hydromulch must be applied as a separate final step Application of seed within the hydromulch is not an acceptable practice at the Site While seed will sprout, the dry climate at the Site often causes the seedlings in hydromulch to desiccate and die before they can become established in the soil

Only mulches bound by vegetable-based binders (tackifiers) are allowed for use on the Site due to previous problems with petroleum based binders leaching into the groundwater Tackifying agents found to be environmentally friendly and chemically acceptable for use at the site are those based on guar gum or Psyllium (alpha plantago) The product known by the brand name SoilGuard was also found to be chemically acceptable Wood fiber or excelsior mulch material provides a good weed-free mulch fiber that can be combined with the tackifiers for good effect Several products of this sort are available on the open market Reprocessed newsprint-type wood fiber mulch has not yielded particularly good results at the Site however and its use is discouraged The thick clumping and persistence of the papier-mache-like product may have inhibited good plant growth in one case

Nylon netting has been prohibited for revegetation efforts at the Site While the netting is an efficient means of stabilizing the mulch during the high winds often experienced at the Site the clear evidence of songbird mortality caused by this netting has led Site ecologists to prohibit the use of netting Killing songbirds is specifically prohibited by the Migratory Bird Treaty Act (MBTA) therefore use of netting can cause a violation of this Act

Experience has shown that hydromulching to a thickness of 1 to 1 5 inches is an optimum application rate If mulch application is thinner the likelihood of revegetation failure will increase Limited or nonexistent success of a revegetation effort will require repeated attempts until successful revegetation is attained

The project must plan to budget contingency funding to ensure available resources for additional revegetation efforts and weed control for a minimum of two years subsequent to the initial planting effort This is necessary due to the arid climate soil characteristics and other factors at the Site Adequate success cannot be assured with a single planting effort under the dry climate unless irrigation can be ensured Due to a growing noxious weed problem at the Site all projects that cause surface soil disturbances must provide for weed control on these disturbances until the new vegetation is firmly established

SEED MIXTURE FOR MOUND/TRENCHES REVEGETATION

Species[1]	Application Rate[2] (lbs/ac PLS)[3]
Big Bluestem (*Andropogon gerardii*)	30
Side-oats Grama (*Bouteloua curtipendula*)	20
Little Bluestem (*Schyzachrium scoparium*[4])	20
Blue Grama (*Bouteloua gracilils*)	20
Blue Flax (*Linum perenne*)	10
Blanketflower (*Gallardia aristata*)	05
Mountain Muhly (*Muhlenbergia montana*)	10
Gayfeather (*Liatris punctata*)	05
Western Wheatgrass (*Agropyron smithii*)	30
TOTAL	15

1) Local native varieties are to be used if available
2) Application rate is for drill seeding This rate should be doubled for broadcast seeding
3) Pure Live Seed
4) Synonymous with *Andropogon scoparius*

Condensate Tanks T-101 and T-102
Operating Instructions

General

Tanks T-101 and T-102 located at the Trenches T3/T4 project site are intended for the temporary storage of condensate generated by thermal desorption operations Tanks T-101 and T-102 are equipped with level measurement and leak detection instrumentation to aid in the safe use of the tanks

The level indication panel (located immediately to the east of the tanks) provides the level of liquid in each tank in units of feet The attached "Volume vs Liquid Level Conversion Table" is mounted on the east and west ends of Tanks T-101 and T-102 for field reference

The level indication panel also includes a red high level alarm light for each tank A tank high level alarm indicates that the tank is "operationally full and that no additional liquid is to be sent to the tank The high level alarms are set at 6 5 feet of liquid for both tanks (the tanks are 8 feet in diameter)

Tanks T-101 and T-102 are double-walled tanks The leak detection panel (located next to the level panel) automatically monitors the secondary containment spaces for leaks in the primary wall of each tank

Tank Filling

A Initial Filling

The first time tanks T-101 and T-102 are filled the liquid level will be monitored manually with a calibrated stick These manual readings will be taken by inserting the stick into the tank vent opening on top of the tank (i e the second flange from the east end of each tank)

Under no circumstances shall either tank be filled above 6 5 feet the operational maximum for each tank

During initial filling of each tank panel level indicator readings will be documented along with the manual stick readings At least five such data points will be obtained These data will be used for final calibration of the tank level instrumentation using the actual process fluid The following table is provided for collecting the required level data

Tank T-101			Tank T-102		
Stick Reading (feet)	Panel Level Indicator Reading (feet)	Date	'Stick' Reading (feet)	Panel Level Indicator Reading (feet)	Date
1			1		
2			2		
3			3		
4			4		
5			5		

B Normal Operation

Normal Operation of Tanks T 101 and T-102 is conducted after final calibration of the tank level instrumentation is completed as described above in Part A

Prior to pumping liquid to Tanks T 101 or T-102 field personnel are to note the existing liquid levels in the tanks by reading the panel level indicators and noting the status of the tank high level alarm lights Tank filing may be initiated if at least one of the tanks does not have a high level alarm indication and there appears to be sufficient liquid storage capacity for the transfer in question If both tanks are available to receive liquid Tank T-101 is to be selected

The tank level and transfer line connections and flanges must be monitored at all times when a tank is being filled If the tank level alarm light turns 'ON" while the tank is being filled flow to that tank will be stopped immediately Liquid may be routed to the alternate tank if it is able to receive liquids as determined by its tank level and the status of the high level alarm indicator

When the level of liquid in a tank has reached 4 feet or approximately 5 000 gallons (see Volume vs Liquid Level Conversion Table) notify the RMRS field supervisor so that he/she can arrange for a tanker truck to be dispatched to the site

Inspect the leak detection panel at least one time per 12-hour shift Channels 1 and 4 give the leak detection status of Tanks T 101 and T 102 respectively Ignore the indicator lights for Channels 2 and 3 The panel indicator lights are interpreted as follows

Indicator Light	Status	Interpretation
1 Leak Alarm Indicator (Red)	OFF	The tank is not leaking
	ON	A leak has been detected Notify the RMRS field supervisor immediately
2 Continuity Indicator (Yellow)	ON	The leak detection sensor is working properly
	OFF	A fault in the leak detection circuit has been detected Notify the RMRS field supervisor immediately
3 Power Indicator (Green)	ON	Power to the leak detection system is on
	OFF	Power to the leak detection system is off

Tank Offloading

Prior to pumping liquid from Tanks T-101 or T-102 the operator will verify which tank is to be pumped to the tanker truck by noting the tank liquid levels on the level indication panel For the tank to be pumped the tanker truck operator will document the beginning tank liquid level and volume (see the attached Volume vs Liquid Level Conversion Table')

To transfer liquid from a tank to the tanker truck follow the steps listed below

1 Verify that the tanker truck is sufficiently empty to receive liquid by visually checking the tanker truck from the top hatch. Leave the hatch open during transfer to prevent pressuring the tanker truck

2 Connect the diaphragm pump discharge line to the tanker truck (3 camlock fitting) Place a bucket for spill containment under the discharge line/truck camlock connection Be sure that the discharge line valve (located next to the camlock fitting) is not accidentally bumped open while making the connection

3 After the pump discharge line/tanker truck connection is made open the tanker truck bottom valve

4 Open the tanker truck inlet valve

5 Place the pump discharge line valve in the OPEN position

6 Place the pump suction line valve associated with the tank to be pumped in the OPEN position

7 Move the air compressor motor starter disconnect to the ON position The motor starter is located to the right of the leak detection panel Start the air compressor by turning the Hand/Off/Auto switch to AUTO

8 Slowly turn the ball valve at the compressed air tank outlet to approximately one half open Liquid will begin flowing into the tanker truck at a rate of approximately 50 gpm Stop pumping when approximately 2 500 gallons of liquid have been transferred to the tanker truck

To stop transferring liquid from a tank to the tanker truck follow the steps listed below

1 Place the compressed air tank outlet valve in the CLOSED position

2 Turn off the air compressor by turning the Hand/Off/Auto switch to the OFF position Move the air compressor motor starter disconnect to the OFF position

3 Place the pump suction line valve in the 'CLOSED position

4 Place the pump discharge line valve in the CLOSED' position (Note air diaphragm pumps may be dead headed without causing damage to the pump)

5 Place the tanker truck inlet valve in the CLOSED position

6 Place the tanker truck bottom valve in the CLOSED position

7 Slowly disconnect the discharge line from the tanker truck being careful to contain any spills resulting from breaking the connection in the bucket Transfer any liquid that may have spilled into the bucket back into Tank T 100 (i e red McLaren Hart tank) Place the discharge hose and bucket back into the pump spill containment pan

8 Close and secure the top hatch on the tanker truck

TABLE D-1

TANKS T-101 AND T-102
TANK VOLUME VS LIQUID HEIGHT

Depth of Liquid (Feet)	Volume of Liquid (Gallons)	
0 0	0	
0 5	264	
1 0	733	
1 5	1,318	
2 0	1,985	
2 5	2,711	
3 0	3,477	
3 5	4,271	
4 0	5,076	
4 5	5,882	
5 0	6,675	
5 5	7,442	
6 0	8,168	
High Level Alarm	[redacted]	*Maximum Fill Volume*
7 0	9,420	
7 5	9,888	
8 0	10,153	

the incidental water holding tank onsite Incidental water will be evaluated per the procedure Control and Disposition of Incidental Waters, 1-C91-EPR-SW 01 Evaluation consists of analysis for gross alpha, gross beta, conductivity, nitrates pH and volatile organic compounds If incidental water is found to be contaminated per SW 01 and contains VOCs equal or greater than the RFCA surface water standards for Segment 5, the water will be sent to the CWTF Incidental water holding tanks will be labeled appropriately

7 1 4 EXCAVATION BOUNDARY SAMPLING

On the basis of the existing site data, the Mound Site excavation depth is estimated to be 15 feet (RMRS, 1997a) Considering the bedrock and groundwater conditions, and the possible depth of dense nonaqueous phase liquid contamination at the Mound Site, the excavation will be limited to the highly weathered bedrock below the alluvial/bedrock contact The highly weathered bedrock is expected to be approximately two to three feet below the top of bedrock (RMRS 1997a) Visual observations and flame ionization detector (FID) readings will guide excavation activities per the approximate excavation boundaries established in the PAM (RMRS, 1997a) Upon completion of the excavation operations per the PAM (RMRS 1997a) excavation boundary samples will be collected per the sampling grid and procedures outlined in the SAP (RMRS 1997b) If an excavation boundary sample fails to meet the cleanup standard additional soil will be excavated from that grid until the cleanup standard is achieved or the limiting conditions described above are met

7 2 TREATMENT

The contaminated soil from the Mound Site will be treated for VOCs by MH using four IRV-150 TDUs Each TDU consists of a low-temperature, low-vacuum extraction chamber and a cover containing an infrared heat source The base of the unit contains a series of well screens and steel tracks Contaminated soil will be loaded into two 4 ft by 4 ft soil trays with a front end loader to a depth of 12-18 inches The loaded trays are then placed into the vacuum chamber The infrared carriage is rolled into position over the chamber and produces hot air and radiant heat which raises the temperature of the top few inches of soil which then becomes a convection emitter of heat A centrifugal blower pulls the heated air downward through the soil increasing the temperatures of the lower layers of soil The downward air flow and temperature differential between the soil surfaces determines the rate of radiant energy transfer and creates reduced pressure in the extraction chamber

The schedule of operation of the TDU treatment will be from 0600 Monday through 0600 Saturday The estimated production rate for the four TDUs is 60 cubic yards per one 24-hour day MH will be responsible for soil transport to the TDUs soil treatment soil transport from the TDUs to the preliminary treated soil stockpile soil transport from the preliminary treated soil stockpile to the final treated soil stockpile dust suppression during transport and treatment and placement of the dust suppression cover material on the final treated soil

stockpile Initial treatment operation will begin with a shakedown run to optimize treatment times and to establish process baseline sample results (RMRS, 1997b) Per the SAP (RMRS, 1997b), soils containing the highest levels of VOCs will be treated during baselining TDU operations will be performed by MH in accordance with their operating procedures for the system their RMRS-approved HASP, and per their contractual agreement with RMRS. The IWCP for treatment, T0090239-4, describes the procedures and steps applicable to document the treatment task. Dyncorp/Filter Services will provide DOP testing of HEPA filters as needed per the HEPA Filter Testing IWCP

Radiological high volume and low volume air sampling for particulate radionuclides will be performed along the perimeter of the EZ/SCA during periods of soil movement or other dust generating activities per the ALARA job review

Operating logs will be maintained by MH to ensure maintenance of complete and accurate operational histories during treatment per COOP-006 (Appendix A). Shift operating rounds will be performed once per shift by Field Supervisors to monitor operating logs recording system and process parameters per COOP-012 (Appendix A). Shift relief and turnover for both RMRS field supervisors and MH field supervisors will be documented on the Shift Relief and Turnover Form in Appendix C per COOP-007 (Appendix A). Quality Assurance personnel from RMRS will perform internal surveillance inspections of the MH operating logs and RMRS field supervisor personnel field logbooks per COOP-002 (Appendix A) In the event that unanticipated hazards or conditions are encountered, as described in the HASP (RMRS, 1997c), the "Check List for Restart of Mound Operations" will be filled out by the Project Manager (Appendix D)

Decontamination and demobilization of MH equipment will commence at or near the end of treatment operations Heavy equipment and all support equipment will have gross decontamination performed in the EZ/SCA at a mobile decontamination site setup within the EZ/SCA before being moved to the main decontamination facility, if necessary Equipment will be inspected and radiologically surveyed before access to the project site. Radiological surveys will be performed before equipment is released from the EZ/SCA and RFETS per the Radiological Controls Manual (KH, 1996) In addition, decontamination will be performed in accordance with operating procedures FO 03, Field Decontamination Operations FO 04, Decontamination of Equipment at Decontamination Facilities, FO 06, Handling of Personal Protective Equipment, and FO 12, Decontamination Facility Operations as described in Section 10

7 2 1 PROCESS VERIFICATION SAMPLING

After treatment, process verification samples will be collected as described in the SAP (RMRS 1997b) Treated soil waiting for process verification results will be stockpiled in the preliminary treated soil stockpile (pTSS) as shown in Figure 2 4 and described in Section

7 2 3 Staging of treated soil in the pTSS will be done to facilitate the analysis and evaluation of analytical results prior to the placement of treated soil in the final TSS (fTSS) as shown in Figure 2 4 Upon receipt of process verification results the RMRS Project Manager or designee will verify attainment of the TDU performance goals as stated in the PAM (RMRS, 1997a) and direct MH to transfer the treated soil to the final treated soil stockpile or if sample results indicate failure to meet the TDU performance to direct MH to reprocess that batch or oven depending on the status of the TDU operations, either baseline or process Documentation of the reprocessing will be documented in the RMRS Field Supervisors logbook and in the shift operating area logs

7 2 2 STACK MONITORING

Although not required by regulation limited TDU stack gas monitoring will be performed during this project to evaluate TDU system performance Stack gas monitoring results will be used to evaluate VOC emissions with the estimated VOC emissions on the Air Pollution Emissions Notice submitted to the Colorado Department of Public Health and Environment This monitoring will include non-specific VOC monitoring using a flame ionization detector (FID) and the collection of samples for compound specific determinations using gas chromatography The FID measurements will conform with 40 CFR Part 60, Method 25A *Determination of Total Gaseous Organic Concentrations Using A Flame Ionization Analyzer*

The samples addressed by this plan will be collected to identify the VOCs (compound specific) and quantify the levels present in the TDU offgas system Samples will be collected before and after the condensers, in accordance with EPA Method TO14 *Determination of Volatile Organic Compounds in Ambient Air Using SUMMA® Passivated Canister Sampling and Gas Chromatographic Analysis* (Winberry et al , 1990) For this task, the use of Tedlar bags may be substituted for SUMMA® canisters, and will be documented in a field logbook as appropriate

Each sample will be assigned a unique nine digit number as shown in Table 7 2 2-1 which lists the sample number ranges and location code blocks available Samples will be collected daily during the first three days of contaminated soil treatment These samples will be collected as sets defined as the samples collected at approximately the same time, from both sides of the condenser system, to evaluate the condenser performance

Since a batch process is being used the samples will be collected when organic flux through the pollution control systems is expected to be the highest Considering the contaminants of concern (e g PCE) the greatest flux will generally occur when the soil temperature is between 135 - 165° F Further refinement of this temperature estimate and therefore optimum sampling time may be possible using input data from the FID If refined a field decision will be made concerning the optimum temperature to collect the air samples This evaluation process will be documented in a project field logbook and will include the

TABLE 7.2.2-1
MOUND STACK SAMPLE AND LOCATION CODES

Sample Type	Sample Number Block	Location Code	Notes
GS (Gas Stream)	GS00001RM-GS00100RM	Stack, Pre_Cond-1, Post_Cond-1, Pre_Cond-2, Post_Cond-2	

approximate range of soil bed temperatures (e g , in the appropriate TDU ovens) when the samples are collected

7.2 3 MANAGEMENT OF THE TREATED SOIL STOCKPILES

Following treatment of soils in the TDU, treated soil will be staged in the preliminary Treated Soil Stockpile (pTSS) as shown in Figure 2 4 Staging of treated soil in the pTSS will be done to facilitate the sampling and analysis per the SAP (RMRS, 1997b) and evaluation of analytical results prior to the placement of treated soil in the final TSS (fTSS) as shown in Figure 2 4 This evaluation will be used to verify attainment of the TDU performance goals as stated in the PAM (RMRS, 1997a)

MH will be responsible for placing the treated soil in the pTSS area after treatment This will include the use of appropriate dust control techniques and marking and labeling techniques of the pTSSs Dust control activities during and following initial placement in the pTSS or fTSS will be the responsibility of MH in accordance with FO 1 (Air Monitoring and Dust Control) MH will provide a ConCover® All Purpose Sprayer (CAPS Machine) or equivalent for the application of dust control products on the fTSS This system will apply a cover material capable of lasting from several weeks to six months depending on application and weather conditions The vendor supplying the CAPS Machine, or equivalent, will provide equipment and application proficiency training to the MH personnel applying the dust suppression agent. The equipment maintenance startup, and application procedures will be provided by MH

It is expected that the CAPS Machine, or equivalent, will be used to apply water as a dust suppression agent when personnel are at the site during continuous, routine operations However when personnel are not conducting work on a continuous basis, such as a work stoppage for the weekends or other stoppages in which personnel are not able to apply water frequently, the fTSS will require the application of a longer lasting dust suppression agent

The following CAPS 900 information and procedures are contained in Appendix E

- CAPS preventive maintenance schedule and daily startup
- ConCover® work sheet
- Water calibration chart (tank volume calibration for CAPS 900 system)
- ConCover® mixing and application procedures
- ConCover® daily application record
- ConCover® MSDS and Product certification
- Freezing conditions maintenance

The RMRS field supervisor will be responsible for visually inspecting the condition of the cover material placed on the fTSS during daily operations If weather conditions cause "bare spots to develop on the fTSS, the RMRS field supervisor will direct MH to apply additional dust suppression agent to the fTSS until approved by the RMRS field supervisor

7 3 SITE RECLAMATION

Site reclamation consists of three tasks backfilling of treated soil into the Mound Site excavation decontamination and demobilization of the remaining project equipment, and re-vegetation

Backfilling of the Mound Site excavation will commence upon confirmation that process verification samples meet or exceed the TDU performance goals stated in Table 3-2 of the PAM (RMRS 1997a) and the radiological soil put back levels if necessary The treated soil stockpile will be backfilled into the excavation using dump trucks and two front-end loaders equipped with a 4 yd^3 bucket (or equivalent) Particulate dust monitoring will be performed during soil transport and backfilling activities Dust suppression with potable water will be applied during soil transport and backfilling When backfilling approaches less than four feet to ground surface, the front end loader will provide additional compaction by driving onto the excavation backfill Radiological high volume and low volume air sampling will be performed with high volume monitoring downwind and low volume monitoring along the perimeter of the SCA during periods of soil movement or other dust generating activities in accordance with the ALARA review (Appendix C)

Decontamination and demobilization of project support equipment and materials will commence on completion of treatment and backfilling operations Regrading and replacement of topsoil stripped from the soil stockpile areas will be performed prior to re-vegetation Re-vegetation of all disturbed areas in the project support zone will be performed in accordance with the guidance provided by ecologists as described in Appendix F and per the revegetation IWCP

8 0 SPILL RESPONSE AND CONTAINMENT

This plan addresses the potential for spills of contaminated soil or hazardous material by preplanning and following the Emergency Response and Spill Control Procedure (1-NO8-HSP-21 04) and Occurrence Reporting Procedure (ADM 16 01) and the RFETS incidental release response actions and occurrence reporting requirements (DOE Order 5000.3) On the basis of the site characterization data as summarized in the PAM (RMRS, 1997a) the hazardous constituents are known and their approximate concentrations are known. The excavation, transport, and treatment activities may cause incidental spills of contaminated soil, hydraulic oil, motor fuel, or other hazardous materials. The following spill response procedures will be performed to contain, control, and cleanup incidental spills.

Prompt notification of the project manager and the Shift Superintendent (extension 2914 or radio 3310) will be made reporting the type, volume, time, and spill response actions to be performed to contain the incidental release If the spill involves potentially radioactive contaminated soil or materials SSOC Radiological Safety and SSOC Radiological Engineering will also be notified Project personnel are adequately trained and have the proper PPE and equipment to respond to most anticipated spills within the project site The Shift Superintendent or a representative from the RFETS emergency response team will respond to the project site when notified of any incidental spill to observe the project teams spill response and cleanup

In the event of an incidental spill of contaminated soil, hydraulic fluid, motor oil or fuels onto unpaved roadways, the material will be excavated with the front end loader or applicable equipment depending on the volume of soil spilled and placed in the CSFS Project RCTs or HSSs will survey the area with appropriate instruments to ensure removal of any radiological contaminated soil Radiological surveys performed in response to incidental spill will be documented In case of liquids, absorbent pads or materials will be used to contain and cleanup the spill and impacted soil will be excavated and removed to the CSFS along with the absorbent materials

In the event of an incidental spill of contaminated soil, hydraulic fluid, motor oil or fuels onto paved roadways, the material will be contained with shovels and brooms or other applicable equipment depending on the volume of soil or material spilled and placed in the CSFS Project RCTs will survey the area with appropriate instruments to ensure removal of any radiological contaminated soil Radiological surveys performed in response to incidental spill will be documented In case of liquids, absorbent pads or materials will be used to contain and cleanup the spill which will be removed to the CSFS

Near the completion of the treatment phase of the project, a visual survey for potential hydrocarbon contaminated soil will be performed and samples will be collected for VOC

screening from the TDU area and CSFS per the SAP (RMRS 1997b) Hydrocarbon impacted soil will then be processed through the TDU In addition, a final radiological survey will be performed over the excavation and TDU areas using the similar grid spacing as the preliminary surveys Any remaining soil which appears to be radiologically impacted will be removed, characterized and disposed of before regrading and site reclamation activities If the release is not incidental and cannot be performed in a safe manner, without endangering oneself or others the release requires implementation of the emergency spill response procedures per the site-specific HASP (RMRS 1997c) and activation of the site Emergency Operations Center In the event of any release of a hazardous material, specifically propane or a material with NFPA Ratings of 3 or 4 an unknown hazardous waste, or unknown radioactive material, the following actions will be taken

- Personnel should warn others, and attempt to stop the release at the source, if it can be done safely
- If it is not possible to stop the release, evacuate the area,
- Notify supervision
- Call 2911 and report the release
- Isolate the area to prevent traffic through the release and
- Minimize personnel exposure to the hazards

Occurrence reporting requirements per ADM 16 01 and DOE Order 5000 3 states that DOE and DOE contractor line management are kept fully and currently informed of all events which could

- Affect the health and safety of the public
- Seriously impact the intended purpose of DOE facilities,
- Have a noticeable adverse effect on the environment
- Endanger the health and safety of workers or
- Adversely affect the national security or the security interests of DOE

If any of the above occur personnel should notify supervision fire and emergency at extension 2911, and the shift superintendent at extension 2914 The individual will report their name organization phone or radio number location of occurrence time of event, and the nature and seriousness of the event per procedure ADM 16 01 and COOP-015 (Appendix A) Table 8 1 presents a list of emergency contacts

Table 8.1
Mound Site Project Personnel Phone List

On-Site Project Trailer (T900D) - 4310

Aldridge Steve	Aldrige Industrial Hygienist	4187	506-2137	3719	
Anderson, Jerry	RMRS Rad Coordinator	6438	7447		
Batson, Cherry	RMRS - Site Access Coordinator	3542	6126		
Bauma, Rick	RMRS - Maintenance	5565	7644	4330	
Bemski, Mike	RMRS - Field Coordinator	4090	7466	3805	
Broussard, Maria	RMRS - Field Operations Manager	6007	4010	3740	
Casslas, Andrea	RMRS - Field Operations Yard	5302	1227	3902	
Caulfield, Rick	Dyncorp - Filter Services	8129	3439	2754	
Chandler Skip	RMRS - Health & Safety	6673	1659	3806	
Cirillo, Russ	RMRS - 891 Water Treatment	5876	5477	3765	
Cowdery Craig	RMRS - Project Support	6953	5466	3743	
Coyne, Dan	RMRS - Maintenance Manager	8177	7223	3411	
Dains, Claudia	RMRS Procurement	4287			
Demos, Nick	RMRS Project Support/Field Sup	4805	3842	3810	
DeWitt, Paul	RMRS Maintenance	3443	1667	3151	
DiGregorio Greg	RMRS QA	5688	1732		
Eccord Sindy	RMRS Procurement	6774			
Garcia, Rich	SEG Waste Tech Supervisor	6616	7599	4838	
Garland, Kevin	SSOC - RCT Foreman	2397	7074	3277	
Garner Shaun	RMRS Project Support	6588	4620	3799	
Gaumintz, Paul	RMRS - IWCP Project Planner	2471			
Gentry Rick	SSOC Rad Engineering	8349/7880	3521	-	
Gillespie Ken	RMRS Site Safety Officer	5356	4007	3733	
Helmick, Al	RTG IWCP Support	7604	3063	3753	
Hintze, Steve	Dyncorp Transportation Foreman	4530	4269	4106	
Hipsher Tim	SSOC RCT Foreman	2397	3369	3271	
Jenkins Ken	RMRS - Safety and Health Lead	2833	7455	4505	
Konwinski Gary	RMRS Environmental Coordinator	2729			
Lindsay Tom	RMRS Field Coordinator	5705	7478	3776	
Lenarcic, Ken	Dyncorp Traffic	2377	1780		
Malfiatano, Mel	Dyncorp Gas Services	6624	5233	2711	
Maydew Tom	RMRS Procurement	6804	fax 7455		
Moltar Joe	RMRS Waste Ops	2808	7714		

Table 8 1- continued
Mound Site Project Personnel Phone List

Newsom Scott	SSOC Radiological Engineer	8148	3977	3242	[redacted]
Parker Doug	Dyncorp Traffic	4430	1733		
Parsons Gary	KH Excavation Specialist	4197	1899	4533	
Patnoe Carol	KH Air Quality	2440			
Paton Ian	RMRS Surface Water	2680	5238		
Pepping Mike	RMRS Waste Generator	3075	7464	3808	
Primrose Annette	RMRS Project Support	4385	4675		
Preston, Dave	RMRS Landfill	5527	0842		
Russell Wade	RTG HSS	5356	6136	3728	
Salomon Hopi	MK Sample/Waste Manager	6627	5129	3779	
Sangaline Tonya	RMRS HS Supervisor	5392	3052	3359	
Schmuck John	RMRS RCRA Specialist	6926	7933		
Schreckengast, Peggy	RMRS HS Supervisor	6790	3059	3702	
Sieben Ann	KH Program Manager	9886	4482	3769	
Sproles Wayne	RMRS Project Manager	5790	1245	3798	
Stoner Norm	KH Environmental Lab	4289			
Tepee John	Dyncorp Transportation	2505	5332	4105	
Tyson Ann	RMRS VP ER	4829	1011		
Ubias Lorenzo	SSOC Rad Ops Manager	8231/7055	5507	3296	
Vess Ty	RMRS Site Access Coordinator	6540	4012	3803	
Wood Mark	RMRS Assistant PM/Field Super	6689	5904	3796	

Additional Project Support Phone Numbers
RTG office 969-8511
Karen Olsen r3795
Frankie Lopez r3761
Terry Toller x6377/d448-2909/r3749
Randy Guild r3811
Trucking Dispatch x2267/2268
Garage Bill Brokaw x2628
Warehouse Bldg 130 Deb x4023
PU+D x2972

14-March-97

9 0 WASTE MANAGEMENT

Several different waste streams will be generated during this project. The waste streams identified include the following

Aqueous and Organic phase condensate, recovered during the TDU process

Used PPE

Used filters

9 1 DEBRIS MANAGEMENT

Debris may include an abandoned water line, any unexpected debris encountered during the excavation and miscellaneous treatment debris Unexpected debris is an unexpected hazard or condition and will be addressed per the HASP (RMRS, 1997c) It is unknown if all the debris is radioactively contaminated or whether the various types of debris are contaminated with VOCs

Following excavation, debris may be segregated into one of three categories.

VOC-contaminated debris

Uncontaminated debris

Mixed/Low-level contaminated debris

Debris contaminated with VOCs, or debris in which a representative sample could not be collected to assure the debris is VOC-free, will be processed in the TDU Debris that the field supervisor expects to be free of significant VOC contamination will be evaluated as such.

Determine if organic vapors can be detected above background using industrial hygiene monitoring equipment

Determine if there is visible evidence of contaminant staining

Using the field supervisor s professional judgement, considering process knowledge, that the debris in question is contaminated with VOCs, the collection of samples for VOC analysis or

Using the field supervisor's professional judgement; considering process knowledge, that the debris in question would be free of VOCs

After evaluating the criteria stated above, if it appears that the debris is contaminated or uncontaminated with VOCs, the field supervisor will request assistance from Radiological Engineering and Radiation Safety to evaluate the debris for radiological contaminants above background Radiological contaminated debris will be segregated, characterized and containerized per RFETS procedures (4-C77-WO-1101 Solid Radioactive Waste Packaging Outside of the Protected Area 1-C80-WO-1102-WRT, Waste/Residue Traveler Instructions, 1-I34-WO-1103-NRWOL, Non-Routine Waste Origination Log Instructions)

Following evaluation of debris samples, the debris will be packaged according to its most likely ultimate disposal location (Envirocare of Utah, Inc) For debris uncontaminated with VOCs and radiological contaminants, the debris will be sent to the Rocky Flats Landfill using dump trucks

Packaging of debris generated from non-treatment activities into roll-offs waste crates or drums will be performed by Waste Technicians and Waste Inspectors supplied under work authorization with Scientific Ecology Group (SEG) Packaging of treatment debris generated during treatment activities will be performed by MH personnel under the direct supervision of an RMRS qualified waste generator The RMRS waste generator will be responsible for insuring that the waste containers are properly filled, labeled, and have the waste residue traveler documentation in accordance with plant procedures (1-C88-WP1027, Nonradioactive waste packaging, 1-M12-WO-4034, Radioactive Waste Packaging Requirements, 4-C77-WO-1101, Solid Radioactive Waste Packaging Outside of the Protected Area, 1-C80-WO-1102-WRT Waste/Residue Traveler Instructions 1-I34-WO-1103-NRWOL, Non-Routine Waste Origination Log Instructions) Placing non-hazardous non-radioactive debris into dump trucks for on-site disposal may be performed by the heavy equipment operators at the direction of the Field Supervisor

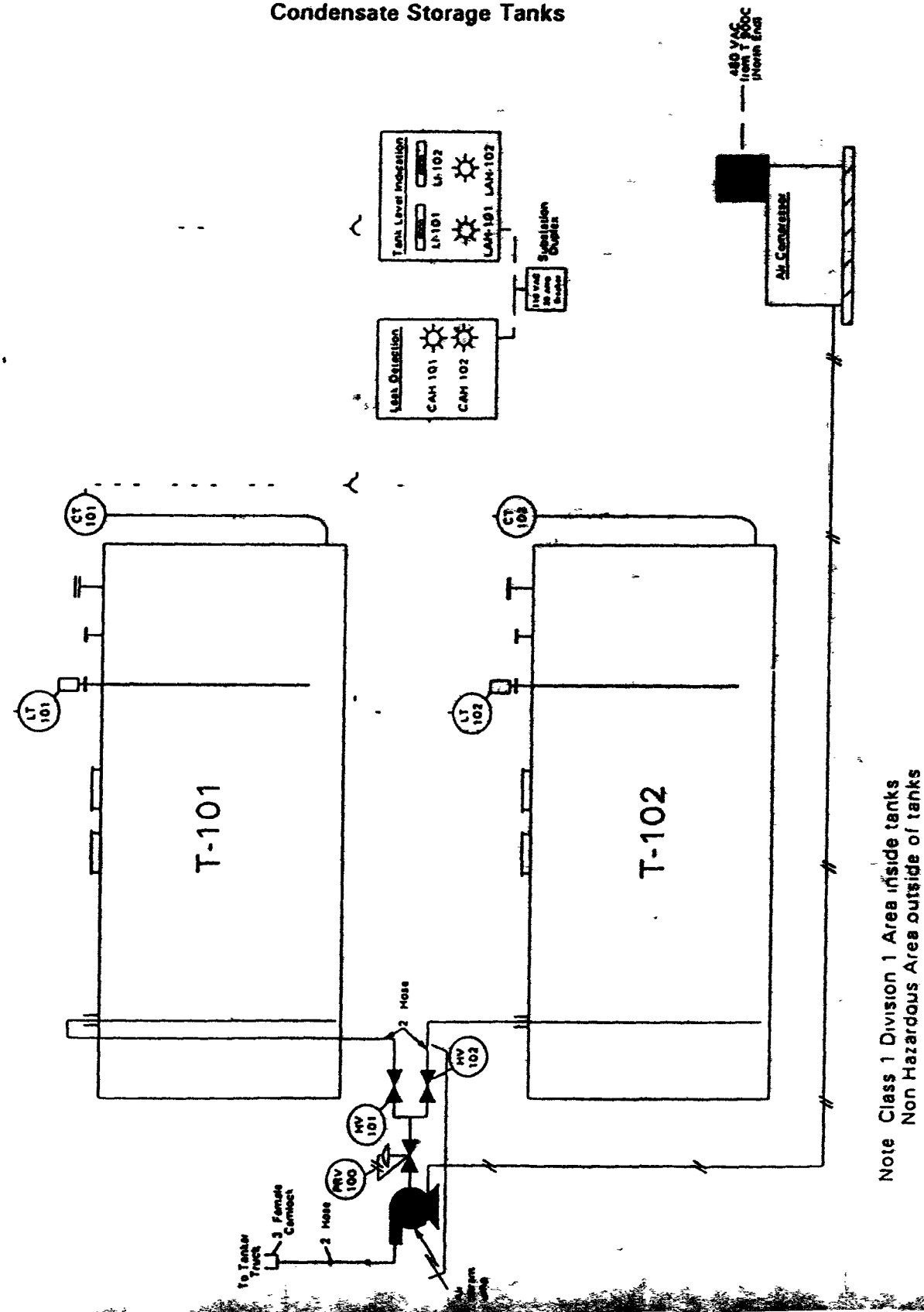
9 2 AQUEOUS-PHASE CONDENSATE MANAGEMENT

Aqueous-phase condensate generated from the TDU condenser will be managed as follows After condensate is collected in the condenser, the aqueous-phase condensate will be pumped into one of two 10,000-gallon double-walled steel tanks located to the north of T900C Organic-phase condensate is not expected to be recovered in sufficient quantities to require the use of an oil/water separator The condensate will be sampled according to the SAP (RMRS 1997b) MH, the TDU subcontractor will perform the condensate transfer and containerization activities

The aqueous-phase condensate that is stored in the two 10,000-gallon above-ground tanks will be transferred to a tanker truck and subsequently transported to the CWTF The condensate will be transferred to the tanker truck using a double diaphragm air pump (see Figure 9 1) Detailed instructions for transferring the condensate are presented in Appendix G Appendix G will be posted by the condensate tanks as an Operator Aid per COOP-012 (Appendix A)

Figure 9 1

Condensate Storage Tanks



The systems in place to insure proper containment and detection of releases include

Double-contained tank system

Corrosion control measures consisting of a Tnemic Series 66 two-coat epoxy-lined tank an outside tank primed with Tnemic 90-93 and finished with Tnemic Series 66

Continuous liquid level indication in units of feet, using capacitance probes (see Figure 9 1)

Liquid high-level alarm indication set at approximately eight feet of liquid

Interstitial space leak detection system using a conductivity probe

Ancillary piping between tanks and containers shall be above ground and free of non-welded flanges joints valves, and other connections except where secondary containment is provided

The capacitance level probes will be initially calibrated using clean tap water prior to installation on the tanks Final calibration of the probes using actual condensate will be conducted during the first drain of each tank (i e , transfer of condensate to the tanker truck) At least three level data points will be obtained for the final calibration This final calibration procedure will require that the liquid level in each of the tanks be manually monitored (i e sticking") during this first filling Once the capacitance probes are calibrated, tank liquid level monitoring and alarming will be provided automatically by the level indication panel shown in Figure 9 1 Operators will record the readings on a daily basis and shall not transfer liquid to a tank that is filled to the maximum operating level as indicated by the tank high level alarm

During operations the tank systems, including ancillary piping, will be monitored by the RMRS Field Supervisor and MH personnel Tank systems will be labeled appropriately Daily inspections (including weekends) will be conducted by Environmental Restoration Operations Group personnel and an inspection log will be maintained to document this activity

Any spills or serious incidents relating to the aqueous-phase liquid waste streams will include immediate notification of the following personnel and the shift superintendent (extension 2914 or radio 3310)

Wayne Sproles Mound Site Project Manager

Office 966-5790
Pager 966-4000 pager number 1245
[redacted]

Marla Broussard, Environmental Restoration Operations Manager

Office 966-6007
Pager 966-4000 pager number 4010
[redacted]

MANAGEMENT OF TEMPORARY CONTAINERS
Aqueous-phase condensate and decontamination or incidental water stored in temporary containers (e g , tanks, condensers or drums) will be managed according to the substantive container management requirements found in Section 5 2 6 of the PAM and listed below

All containers will be in good condition, will be compatible with the waste being stored, and will remain closed except when adding or removing waste. Note, that for the purposes of this project, the containers used for condensate processing or temporary storage will have open tops or vents to facilitate the inflow and outflow of condensate liquids

All containers processing or storing condensate liquids will be used in conjunction with an appropriate secondary containment system. Where practical (e.g , 55-gallon drums), the containers will be elevated from the base of the secondary containment or the base must be sloped so that accumulated liquids are not in contact with the waste, and can be removed

The containment system must have sufficient capacity to contain 10% of the volume of containers or the volume of the largest container, whichever is greater Spilled or leaked waste must be removed in a timely manner as necessary to prevent overflow of the containment system.

9 3 PPE MANAGEMENT

Used PPE are expected to be segregated and placed into an on-site cargo container It will be managed according to the HASP (RMRS, 1997b) and plant procedures by RMRS waste generator qualified personnel

9 4 USED FILTER AND MISCELLANEOUS WASTE MANAGEMENT

Several types of used filter waste streams will be generated during this remedial project These include High Efficiency Air Filter (HEAF) and High Efficiency Particulate Air (HEPA) filters The HEAF and HEPA filters will be managed by RMRS Waste Generator Services Group personnel A NRWOL (1-I34-WO-1103-NRWOL) has been prepared and the waste will be packaged in the appropriate waste containers per RFETS procedures (see Section 9 1)

Resourceful management options for the HEAF and HEPA filters may include combining with the debris waste stream (if the same waste radiological/hazardous classifications apply)

9 5 DECONTAMINATION WASTE WATER

Decontamination waste water generated at the site from personnel and equipment decontamination activities (see Section 10 0) will be used for dust suppression Specifically the decontamination water will be applied to contaminated soils awaiting treatment in the feed stockpile Decontamination water will be applied to soils in the CSFS at the discretion of the RMRS Field Supervisor (when there are sufficient contaminated soils remaining in the CSFS to absorb the water)

When soils that have been wetted with decontamination water are treated, the decontamination water will be desorbed and recondensed and will become part of the aqueous-phase condensate stream The aqueous-phase condensate stream is ultimately transported to the CWTF for final treatment as described in Section 9 2 of this document The use of decontamination water for dust control reduces the amount of clean water required for use in dust suppression activities and ultimately reduces the volume of waste water generated by the project During rainy periods when additional water for dust suppression on contaminated soils is not needed the decontamination water will be temporarily stored for later use in dust control activities or will be transported to and treated at the CWTF Decontamination water holding tanks will be labeled appropriately

10 0 DECONTAMINATION

Decontamination activities will be performed as described in the site specific HASP (RMRS, 1997c) Personnel will be decontaminated within the CRZ at the stepoff pad access/egress points for the excavation CSFS, the TDU and during backfilling Heavy equipment and all support equipment will have gross decontamination performed in the EZ/SCA at a mobile decontamination site before being moved to the main decontamination facility Equipment will be inspected and radiologically surveyed before access to the project site Radiological surveys will be performed before equipment is released from the EZ/SCA and RFETS per the Radiological Controls Manual (KH 1996) In addition decontamination will be performed in accordance with operating procedures FO 03 Field Decontamination Operations, FO 04, Decontamination of Equipment at Decontamination Facilities FO 06, Handling of Personal Protective Equipment and FO 12 Decontamination Facility Operations

Debris decontamination may be performed in the field or at the main decontamination facility if practical

11 0 REFERENCES

Department of Energy (DOE), Order 5400 3

Department of Energy (DOE), Order 5480 19

Department of Energy (DOE), 1996, Rocky Flats Cleanup Agreement, Rocky Flats Environmental Technology Site, Golden, Colorado

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RMRS, 1997a, FINAL Proposed Action Memorandum for the Source Removal at the Mound Site IHSS 113, Rocky Flats Environmental Technology Site, Golden, Colorado, RF/RMRS-96-0059 Rev 0, February 3, 1997

RMRS, 1997b, FINAL Sampling Analysis Plan to Support the Source Removal at the Mound Site IHSS 113, Rocky Flats Environmental Technology Site, Golden, Colorado, RF/RMRS-96-0060, Rev 0, February 18, 1997

RMRS, 1997c, Site Specific Health and Safety Plan for the Source Removal at the Mound Site, IHSS 113, Rocky Flats Environmental Technology Site, Golden, Colorado, RF/RMRS-96-0061, Rev 0, February 1997

Winberry, W T , et. al , 1990, Methods for Determination of Toxic Organic Compounds in Air, EPA Methods, Noyes Data Corporation, Park Ridge, New Jersey, pp 467-583

CONDUCT OF OPERATIONS (COOP)

Implementation of COOP for the Mound Site Source Removal Project
February 20 1997

1 31000-COOP-001 CONDUCT OF OPERATIONS

Purpose Provides requirements guidelines, and instructions to ensure that operations and support activities are conducted in a manner consistent with RFETS goals objectives and approved procedures in accordance with DOE Order 5480 19

COOP-001 is implemented as described below for each of the subsections

1 31000-COOP-002 INTERNAL SURVEILLANCE PROGRAM

Purpose Describes the process for conducting management internal surveillance of activities to help ensure operations are safely and efficiently performed.

Personnel from quality assurance will perform internal surveillance s of field activities conducted by RMRS and subcontractor personnel

1-31000-COOP-003 CONTROL OF ON-SHIFT TRAINING

Purpose Establishes the necessary on-shift evaluation and qualification training requirements for all on shift instructors and operations and support personnel

Project personnel comply with COOP-003 with all onsite training requirements and 3-day OJT for hazardous waste operations Subcontractors will also comply with COOP-003 with their project specific training performed onsite and the 3-day OJT for hazardous waste operations

1 31000-COOP-004 VITAL SAFETY SYSTEMS OPERATIONAL STATUS

This procedure is applicable to RFETS nuclear facility buildings and is not applicable to the Mound Site Source Removal Project as the project does not utilize VSS

1 U70-COOP-005 AUTHORIZATION BASIS TRACKING AND DOCUMENTATION

Purpose Describes the process for tracking and documenting Limiting Conditions for Operation (LCO) surveillance s and Operational Safety Requirements (OSRs) compliance related compensatory measures associated with Unreviewed Safety Question Determinations (USQDs) Engineering Operability Evaluations (EOEs) and Justifications for Continued Operations (JCOs)

The Mound Site Source Removal Project prepared an Aud able Safety Analysis which classified the project as a low hazard non nuclear The Auditable Safety Analysis was reviewed and approved by the RMRS Operational Review Committee therefore this procedure is not applicable

1 31000-COOP-006 OPERATING AREA AND LOGS

Purpose Defines the process for identifying and controlling operating logs and other records to ensure maintenance of complete and accurate operational histories. Environmental Restoration Management systems which do not affect connect to or interface with plant systems or utilities and which are owned and being operated by subcontractors are exempt from this procedure

Treatment The treatment system is connected to plant power therefore COOP-006 is applicable during treatment operations As part of the treatment process the subcontractor will maintain logs per this procedure and COOP 012 Shift Operating Rounds RMRS will also maintain controlled logbooks per 2 S47-ER-ADM-05 14 Use of Field Logbooks and Forms to document field activities during the implementation of the project

1 31000 COOP-007 SHIFT RELIEF AND TURNOVER

Purpose Describes requirements guidelines and actions to be taken during shift relief and turnover to ensure effective communication of system and process operating parameters routine, and scheduled shift activities and unusual or off normal conditions

This procedure is applicable during operation of the treatment system which will be operated 24 hours per day five days per week Shift relief and turnover and staff changeovers will be conducted by RMRS and subcontractor personnel in accordance with COOP 007

1 31000 COOP 008 CONTROL OF CAUTION TAGS

Purpose Describes the process for controlling Caution Tags to continue operating equipment and facilities when situations arise that require special temporary cautionary measures

This procedure applies to treatment operations and the Field Supervisor will defer to the Lockout/Tagout manager for either a Caution Tag or Lockout/Tagout of the affected equipment Lockout/Tagout of affected equipment will be performed in accordance with HSP 2 08

1 31000 COOP 009 CONTROL OF INFORMATION TAGS CANCELED

1-31000-COOP 010 CONTROL OF OPERATOR AIDS

Purpose Defines the process for controlling operator aid postings and information tags for the safe operation of RFETS

This procedure is applicable and Mound Site project management personnel will control and post operator aids for the following equipment

Excavation

Post procedure for air trailer operation and MSA ultralight quick connect system

Treatment

Post procedure for operation of condensate transfer to condensate storage tanks operation of condensate tanks and transfer of condensate to tanker truck

Post procedure for operation of low temperature thermal desorption units

Post procedure for operation of propane vaporizer shut down and start up and propane line emergency shutoff valves

1 31000 COOP 011 PRE EVOLUTION BRIEFING

Purpose Describes the process for preparing scheduling and conducting Pre Evolution Briefings (PEBs) to identify and address Conduct of Evolution to mitigate potential impacts to the public health safety or the environment resulting from a scheduled evolution

This procedure is applicable to all phases of the Mound Site Source Removal Project A PEB is given to all team members prior to each task The Mound Site Source Removal will have a PEB before the culvert extension site preparation excavation treatment and site reclamation tasks and when there are changes in scope of a task or for new personnel

1 31000 COOP 012 SHIFT OPERATING ROUNDS

Purpose Provides instructions for performing operator rounds to monitor and record system and process parameters for each operating shift Requires operations personnel to tour operations once per shift Used to identify and correct undesirable trends and equipment problems and to facilitate turnover of equipment status (COOP 007)

This procedure is applicable and Mound Site Source Removal Project treatment subcontractor personnel will use round sheets or controlled logs to collect specific data record equipment status note unusual conditions and plot performance trends Log sheets will be used to record oven start time oven temperature stop times pressure differentials vacuum readings stack FID readings and other equipment monitoring data recorded during treatment Inspection tours will be performed to verify system performance standby equipment is operational and equipment alarms are functional

1 G58 COOP 013 STANDING SHIFT AND OPERATIONS ORDERS

Purpose Provides procedures for development approval distribution revision cancellation and maintenance of Standing Shift and Operations Orders

This Order appears to be programmatic and we will comply with any Standing Shift and/or Operations Orders which apply to our operations

1-31000-COOP-014 INDEPENDENT VERIFICATION

Purpose Describes administrative controls to perform Independent Verification (IV) for components and system alignment. Required for valves, breakers and other components in any system that provide life support (for example breathing air) to personnel Required for valves breakers, and other components in any system that could result in a release of hazardous materials or energy where personnel and environmental safety is concerned

This procedure is not applicable to the breathing air system used during the Mound Site Source Removal Project as the project will be conducted in an open air environment which allows ready access to the air supply trailer and to emergency egress as required The breathing air system is a portable cascade breathing air system where an air trailer and air trailer operator are at the immediate area of breathing air use. The air trailer operator maintains surveillance of personnel using supplied air at all times Ground personnel will utilize MSA ultralight quickfill SCBA air equipment which is refilled by the individual ground personnel during use The air trailer operator maintains eye contact with the ground personnel during refilling of the quickfill SCBA The heavy equipment operators are provided breathing air from two 3400 psi air bottles mounted on each of the equipment Each piece of air equipment is equipped with alarm bells when air supply is low and an emergency egress air supply Air gauges and air equipment are examined and performance checked at the beginning of each shift Air tanks will be refilled as necessary Air trailers are exchanged out with new refilled air trailers as needed Project personnel are trained in the use of the air equipment prior to initiating work Grade D certified breathing air is supplied by a qualified vendor Personnel are instructed how to perform emergency egress if their breathing air equipment fails as part of the site specific breathing air training

This procedure is not applicable to the propane line or condensate lines which could result in a release of hazardous materials because the propane line and condensate transfer lines are temporary installed in an open visually observable environment and inspected daily by industrial hygienists with an explosimeter The propane line will be checked by Facility Inspection after installation pressure gauges are checked frequently during operations and the line will be shutoff when not in operation Condensate transfer lines valves and connections are visually observed by the operator during transfer of condensate

1 31000-COOP-015 COMMUNICATIONS CRITERIA

Purpose Defines the communication criteria required to ensure a complete and consistent exchange of information or instruction

Applicable to all phases of the project Ensures communications contain information or directions necessary to successfully achieve the desired result. Give directions that are explicit understandable, and include who is giving the direction who is to perform the action what is to be done and why when it is to be done, what procedure if applicable and additional communication required (when to report the task is completed) Minimize multiple actions in verbal instructions write down multiple actions or give several short verbal instructions after each task is completed When verbally receiving data write down the information and do not rely on memory The recipient acknowledges all communications by repeating back the communication as necessary to ensure the originator s communication is understood Reporting emergencies per procedures (HASP FIP) and conduct communications so as to not interfere with timely mitigation of the emergency Procedure details written verbal and hand signal and gestures to be used Addresses telephone and two way radio communication procedures Describes use of the LS/DW System RMRS will in addition to conducting communication in accordance with COOP 015 utilize an equipment status board and document shift relief and turnover per COOP 007 and maintain field logbooks and forms per COOP 006

1 31000-COOP 016 PLAN OF THE DAY

Purpose Provides requirements guidelines and instruction associated with the Plan of the Day (POD) process used to control operations and maintenance activities at RFETS

This procedure is applicable to all phases of the Mound Site Source Removal Project Project personnel schedule field work on the Environmental Restoration Plan of the Week each week During field work, a plan-of the-day/tool

box meeting is conducted each day by the field supervisor covering lessons learned from the work completed the previous day and the scope of the work to be performed that day and the industrial hygienist covering the hazards and hazard mitigation which are summarized on the task specific AHAs Team members are requested to provide input into the plan of the day and reminded that safety is first Safety begins with each individual who by looking after themselves can better protect their coworkers Project staff encourage subcontractors to be proactive in their own safety program and challenge them to respond accordingly A recent example is the Responsible Individual (RI) program in which a subcontractor worker is identified as an RI at the morning plan of the day/tool box meeting The RI is asked to observe work during the day for safety problems or hazards The RI is then asked to report about what in general they observed and then the RI is asked to talk about another safety topic at the next mornings meeting

1 31000 COOP 017 CONTROLLED DEACTIVATION OF ALARMS
Purpose Describes actions to be taken for deactivation and reactivation of all alarms affecting safety at RFETS and to ensure compliance with applicable Operational Safety Requirements (OSRs) and Limiting Conditions for Operations (LCOs)

The Mound Site Source Removal Project will not be utilizing an alarm system which is applicable to OSRs or LCOs

1 31000 COOP 018 VITAL SAFETY SYSTEM STATUS CONTROL
Purpose Provides requirements guidelines and instructions for managing the status of a Vital Safety System (VSS) at RFETS

This procedure is not applicable to the Mound Site Source Removal Project because the project does not utilize VSS operating status control or uses a component of a VSS

1 31000 COOP 019 RETURNING SYSTEMS AND EQUIPMENT TO SERVICE
Procedure is canceled and incorporated into COOP 001

1 31000 COOP 020 TERMINATION OF OPERATIONS PROCESS
Purpose Provides instructions for determining the necessary scope of termination of operations implementing the defined scope of termination of operations and processing a Justification for Continued Operation (JCO) Required by the OSRs for termination of operations for both resumption and nonresumption facilities

The Mound Site Source Removal Project is classified as low hazard non nuclear and thus not a nuclear facility based on the Auditable Safety Analysis Report (dated February 10 1997)

1 31000 COOP 021 OPERABILITY DETERMINATION PROCESS
Purpose Provides instructions for all necessary reporting communication and control activities from the time a VSS deficiency is identified until an operability determination has been made

This procedure is not applicable to the Mound Site Source Removal Project as the procedure is a requirement of DOE Order 5480 5 Safety of Nuclear Facilities and the project is classified as low hazard non nuclear hazard classification However there will be a specific step in the Integrated Work Control Package for Treatment which will require signature approval by the project manager for the treatment vendor to proceed with the treatment process based on meeting the baseline conditions during shakedown per the projects Sampling Analysis Plan

1 31000 COOP 022 INACTIVATION OF EQUIPMENT AND AREAS
Procedure is canceled